UNIVERSITY of NICOSIA

ECTS Syllabus

Course title	**Biostatistics**				
Course code	PHPHD-703				
Course type	Required				
Level	PhD				
Year / Semester	1st Year/1st Semester				
Teacher's name	Dr Christos Papaneophytou / Dr Stavros Pouloukkas				
ECTS	10	**Lectures / week**		**Laboratories / week**	
Course purpose and objectives	The main objectives of the course are: The purpose of the course is for the PhD candidate to acquire knowledge and skills needed to proceed with the analysis of qualitative and quantitative data as an independent researcher.				
Learning outcomes	Upon completion of the course, the student will be able to: 1. understand the basic stages of sample research. 2. recognize the basic concepts of descriptive and inductive statistics. 3. select and apply to each research question the corresponding statistical test 4. interpret the results of statistical analysis and draw valid conclusions based on the results 5. understand the information in statistical tables and charts, as well as code statistical data themselves in the form of statistical tables and charts. 6. Demonstrate a good understanding of the meaning and use of important distributions. 7. recognize and analyze the basic principles of probability. 8. independently use regression models and define the sampling distribution of a statistic 9. know when and how to use non-parametric tests				

	10. independently use the SPSS statistical package for statistical data analysis in the field of pharmaceutical sciences 11. demonstrate an organized approach to the analysis of data collected to answer a scientific question.		
Prerequisites	N/A	**Required**	
Course content	1. Sampling methods 2. Descriptive Statistics: Discrimination of variables, frequency distribution, graphs, dispersion parameters. Transformation, normal values. Coefficient of variation. Measurement of experimental error. 3. Quantitative data analysis 5. Qualitative data analysis: Biaxial classification of qualitative data 6. probability and probability distributions, hypothesis testing, regression and correlation analysis, basic concepts of statistics and descriptive statistics, statistical comparison methods, statistical analyses, research design, data collection tools, inspection of sufficiency and reliabilities, scaling and preparation of scientific reports 7. Analysis of variability with one or more factors (ANOVAs), with repeated measures (Repeated - measures ANOVA) and multivariate analysis techniques (MANCOVA) 8. Non-parametric tests: Advantages and disadvantages. The main non-parametric tests 9. Cluster analysis, Hierarchical analysis, factor analysis, Principle Component Analysis 10. Systematic review with meta-analysis		
Teaching methodology	Lectures, practical examples applied to real data.		
Bibliography	1. Van Belle, Fisher, Heagerty, Lumley: Biostatisics: A Methodology for the Health Sciences, 2nd edition. Wiley 2. Vittinghoff, Glidden, Shiboski, McCulloch: Regression Methods in Biostatistics: Linear, Logistic, Survival, and Repeated Measures Models, 2nd edition. Springer.		
Assessment	Continuous Assessment (assignments), Final Exam		
Language	English		