COURSE OUTLINE

Ημερομηνία: 8 Νοε 2022

A. INFORMATION FOR THE COURSE

A1. School	School of Science and Technology of Information
A2. Department	Department of Statistics
A3. Master Programme	
A4. Course Code	6118
A5. Title of the Course	BIOSTATISTICS II

Lecturers

Name	Rank	Specialization
PATERAS KONSTANTINOS	University Scholar	
BESBEAS PANAGIOTIS	Associate Professor	Applied Statistics

B. TYPE OF COURSE

B1. Year of Study	4
B2. Semester	7th
B3. Level of Course (if applicable)	1st Cycle
B4. Type of course	Elective
B5. Field	Scientific Field
B6. ECTS credits allocated (ECTS)	8.00
B7. Is the Course in the Syllabus?	Yes
B8. If yes, which is the reference Page?	29-68
B9. Is there a site for the course?	Yes https://www.dept.aueb.gr/el/stat-courses

C. INSTRUCTION

C1. Lectures Include:	Classroom lectures: Yes Distance learning lectures: No Seminars: No Laboratory exercises: Yes Field training exercise: No Literary analysis: No Tutorial: Yes Interactive teaching: No Educational visits: No Project: No Essays/reports: No Independent study: Yes Lectures given by scientists: No Internship: No
C2. Scheduled Hours for Lectures per week	4.00
C3. Scheduled Hours for Tutorials per week	1.00
C4. Scheduled Hours for Workshops per week	1.00
C5. Scheduled Hours for Case Studies per week	
C6. Scheduled Hours for Other Activities per week	
C7. Scheduled Hours for Lectures per semester	52
C8. Scheduled Hours for Tutorials per semester	13
C9. Scheduled Hours for Workshops per semester	13
C10. Scheduled Hours for Case Studies per semester	
C11. Scheduled Hours for Other Activities per semester	
C12. Mode of Delivery	Face to Face
C13. Student's Evaluation	Written examination at the end of the semester: Yes Oral examination: No Midterm exam: No Homework: No Project: Yes Public Presentation: No Laboratory exercises: No Practical exercises: No Exempt work: No

C14. Language of Instruction	Greek

D. PREREQUISITE COURSES

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E. COURSE CONTENTS (Syllabus)

Survival data, censoring (left, right, interval) and types of censoring. Survival time distributions and associated functions (survivor function, hazard function, integrated hazard, mean residual life and relationships). Some parametric models (exponential, Weibull, Log-logistic etc).
Non-parametric Survival Analysis: Methods for estimating survivor functions: Kaplan-Meier and Nelson-Aalen estimators. Standard errors, types of confidence interval (plain, log, cloglog) and inference. Methods for comparing survivor functions. Log rank test and generalisations (Wilcoxon, Peto, Fleming-Harrington etc). Extensions to more than two samples.
Parametric Survival Analysis: Distributions and likelihood functions. Hypothesis testing (Wald, likelihood ratio and score tests), asymptotic theory, confindence intervals and inference. Extensions to two samples.
Semi-parametric Survival Analysis: Survival analysis with covariates. Family of Proportional Hazards models. Cox Proportional hazard model, partial likelihood and inference.
Applied survival analysis: software and computing.

F. LEARNING OUTCOMES

The students after attending successfully the course will be able to:
o know and understand topics of Survival Analysis
o obtain intellectual skills of relevant theory and methods
o obtain practical skills for data analysis
o transfer skills to Medical Statistics and biostatistics.

G. LITERATURE

G1. Use of Multiple Literature	Yes
G2. Recommended or required reading	