COURSE OUTLINE

Ημερομηνία: 9 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	6125
A5. Title of the Course	SIMULATION

Lecturers

Name	Rank	Specialization
DELLAPORTAS PETROS	Professor	Statistics

B. TYPE OF COURSE

B1. Year of Study	3
B2. Semester	6th
B3. Level of Course (if applicable)	1st Cycle
B4. Type of course	Elective
B5. Field	Background
B6. ECTS credits allocated (ECTS)	7.00
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: No Field training exercise: No Literary analysis: Yes Tutorial: Yes Interactive teaching: No Educational visits: No Project: Yes Essays/reports: Yes Independent study: No Lectures given by scientists: No Internship: No
C2. Scheduled Hours for Lectures per week	4.00
C3. Scheduled Hours for Tutorials per week	
C4. Scheduled Hours for Workshops per week	2.00
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	
C9. Scheduled Hours for Workshops per semester	26
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: No Oral examination: No Midterm exam: No Homework: Yes Project: Yes Public Presentation: No Laboratory exercises: No Practical exercises: No Exempt work: No

C14. Language of Instruction	Greek

D. PREREQUISITE COURSES

E. COURSE CONTENTS (Syllabus)

Introduction. Uniform random number generation. Variance reduction and Monte Carlo integration, importance sampling, antithetic variables, control variables. Generation of dependent random variables, ordered sample, exponential intervals, multivariate normal distribution, Poisson process, Markov chains, random Markov fields, MCMC.

F. LEARNING OUTCOMES

The students after attending successfully the course will be able to know principles of stochastic simulation and implementation via computing.

G. LITERATURE

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