ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

COURSE OUTLINE

A. INFORMATION FOR THE COURSE
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A1. School	School of Science and Technology of Information
A2. Department	Department of Statistics
A3. Master Programme	
A4. Course Code	6115
A5. Title of the Course	NUMERICAL METHODS IN STATISTICS

Lecturers

Name	Rank	Specialization
YANNACOPOULOS ATHANASIOS	Professor	Applied Stochastic Analysis

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	Scientific Field
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: Yes
	Field training exercise: No
	Literary analysis: Yes
	Tutorial: No
	Interactive teaching: No
	Educational visits: No
	Project: Yes
	Essays/reports: Yes
	Independent study: Yes
	Lectures given by scientists: No
	Internship: No
C2. Scheduled Hours for Lectures per week	2.00
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	26
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: Yes
	Laboratory exercises: No
	Practical exercises: No
	Exempt work: Yes

C14. Language of Instruction	Greek

D. PREREQUISITE COURSES

Knowledge of topics related to statistical inference, are very useful.

E. COURSE CONTENTS (Syllabus)

Numerical root-finding methods for equations of one variable, approximation methods, interpolation methods, curve fitting, numerical linear algebra, Cholesky decomposition, iterative methods for linear systems, numerical integration & differentiation, numerical optimization with/without constraints, random search algorithms, EM algorithm.

F. LEARNING OUTCOMES

Students at the end of the course will have a good understanding on how to use computer intensive methods for statistical inference, but also methods that are strongly dependent on computing for solving statistical problems

G. LITERATURE

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