

COURSE OUTLINE

Ημερομηνία: 4 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	6133
A5. Title of the Course	INTRODUCTION TO MATHEMATICAL ANALYSIS

Lecturers

Name	Rank	Specialization
YANNACOPOULOS ATHANASIOS	Professor	Applied Stochastic Analysis

B. TYPE OF COURSE

B1. Year of Study	2
B2. Semester	3rd
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: No Field training exercise: No Literary analysis: No Tutorial: Yes Interactive teaching: No Educational visits: No Project: No Essays/reports: Yes 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	2.00
C4. Scheduled Hours for Workshops per week	0.00
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	26
C9. Scheduled Hours for Workshops per semester	0
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: Yes Project: No Public Presentation: No Laboratory exercises: No Practical exercises: No Exempt work: No

C14. Language of Instruction	Greek
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D. PREREQUISITE COURSES

E. COURSE CONTENTS (Syllabus)

Sequences, subsequences, limsup, liminf, series and applications

Continuity, uniform continuity, maximization and minimization of continuous functions, convexity and applications

Stieltjes integral and applications

Introduction to metric spaces, open, closed and compact sets and applications

Norms and linear metric spaces with applications

Introduction to inner product spaces and applications.

Linear maps between metric spaces, dual space.

F. LEARNING OUTCOMES

Upon successful completion of the course, students should be able to fully master and apply the fundamental concepts and techniques of mathematical analysis, focusing on possible applications to statistics and probability and its applications in various fields related to the economic sciences.

G. LITERATURE

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