

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		SEMESTER	E
COURSE TITLE	ANALYSIS		
INSTRUCTOR	Antonios Tsolomitis		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
		6	9
COURSE TYPE	General background		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	http://www.math.aegean.gr/index.php/en/academics/undergraduate-programs		

(2) LEARNING OUTCOMES

Learning outcomes
The student will become familiar with the ideas of convergence of sequences of functions and the ideas of the fundamental notion of Lebesgue measure and the ability to use them in courses that require knowledge of Lebesgue integration (such as Probability, Functional Analysis, Convex Geometry etc).
General Competences
Working independently. Working in an interdisciplinary environment. Production of free, creative and inductive thinking.

(3) SYLLABUS

<ol style="list-style-type: none"> 1. Sequences and series of functions. Powerseries. 2. Pointwise convergence and uniform convergence of sequences and series. Radius of convergence of powerseries. 3. Differentiation and integration of the limit of a sequence and series of functions. 4. Weierstrass approximation theorem. 5. σ-algebras in \mathbb{R}. 6. Outer measure and measure Lebesgue. 7. Measurable functions. 8. Lebesgue integral on \mathbb{R}. 9. Relation of the integrals of Riemann and Lebesgue. 10. Convergence theorems. 		
<table border="1" style="width: 100%;"> <tr> <td style="width: 25%;">TEACHING MATERIAL DISTRIBUTION</td> <td>The teaching material of the course is uniformly distributed during the semester.</td> </tr> </table>	TEACHING MATERIAL DISTRIBUTION	The teaching material of the course is uniformly distributed during the semester.
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(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face lectures	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Communication with students via e-mail	
TEACHING METHODS	<i>Activity</i>	<i>Semester workload</i>
	Lectures	52
	Tutorials	26
	Independent study	147
	Course total (25 per ECTS)	225
COURSE COMMITMENTS	Attending course and tutorial sessions is not obligatory.	
STUDENT PERFORMANCE EVALUATION	Student's evaluation is done in Greek through a written examination which includes short-answers questions and problem solving. For students with disabilities, evaluation takes place via oral exams.	

(5) ATTACHED BIBLIOGRAPHY

1. Real Analysis, M. Anoussis, A. Tsolomitis, V. Felouzis (in Greek).