

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		SEMESTER	F
COURSE TITLE	COMPLEX 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
Students successfully completing the course will be able to realize the reason complex numbers are introduced as well as the way the field of complex numbers is constructed. They will understand the notion of complex derivative and its consequences. They will be able to recognize complex integrals as line integrals, use Residues to compute complex integrals, and apply complex techniques to compute real integrals.
General Competences
Working independently. Team work. Working in an interdisciplinary environment.

(3) SYLLABUS

Complex numbers, Complex functions, Cauchy-Riemann equations and holomorphic functions. Power series expansion, exponential and logarithmic functions. Riemann-Stieltjes integral, line integrals. Cauchy's theorem, Liouville's Theorem. Convergence of holomorphic functions, classification of singularities. Schwartz Lemma, Residue Theorem, computation of integrals using residues.	
TEACHING MATERIAL DISTRIBUTION	The teaching material of the course is uniformly distributed during the semester.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • Communication with students via e-mail • Uploading course material on moodle system. 	
TEACHING METHODS	Activity	Semester workload
	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

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| <ol style="list-style-type: none"> 1. Mark J. Ablowitz, Athanassios S. Fokas, "Complex variables", Cambridge University Press (2012). 2. James Ward Brown, Dearborn Ruel V. Churchill, COMPLEX VARIABLES AND APPLICATIONS, McGraw Hill, ISBN-13: 978-0073383170. 3. Authors: Bak, Joseph, Newman, Donald J., "Complex Analysis", UTM Springer, ISBN 978-1-4419-7287-3. 4. Dimitris Kravvaritis, "Applied Complex Analysis", Published by Symeon, 2006, ISBN 960-7888-65-0, ISBN-13 978-960-7888-65-5. |
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