

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		SEMESTER	F
COURSE TITLE	ALGEBRAIC TOPOLOGY		
INSTRUCTOR			
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
		4	6
COURSE TYPE	Specialised general knowledge		
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
Understanding the equivalence relation of homotopy, covering spaces and homotopy lifting property, Applications of the fundamental group of the circle, Calculations of fundamental groups using the Van Kampen Theorem.
General Competences
Working independently. Team work. Working in an interdisciplinary environment.

(3) SYLLABUS

Definition of the Fundamental group, Covering spaces, examples, Calculation of the fundamental group of S^1 , strong deformation retractions of topological spaces, Van Kampen Theorem, applications: Fundamental Theorem of Algebra, Borsuk-Ulam Theorem, Fixed Point Theorem, Jordan Separation Theorem.	
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"> • Use of ICT in teaching • Communication with students via e-mail 	
TEACHING METHODS	Activity	Semester workload
	Lectures	52
	Independent study	98
	Course total (25 per ECTS)	150
COURSE COMMITMENTS	Attending course 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.
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(5) ATTACHED BIBLIOGRAPHY

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| 1. Allen Hatcher, Algebraic topology. <i>Cambridge University Press, Cambridge, 2002.</i> |
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