

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	POSTGRADUATE Studies in Mathematics		
COURSE CODE	A5	SEMESTER	
COURSE TITLE	GROUP THEORY		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
	3	10	
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 free groups and group presentations. Examples. Understanding group actions on trees kai how these provide information about the group structure. Understanding groups as geometric objects.
General Competences
Search for analysis and synthesis of data and information Working independently Team work Production of free and inductive thinking

(3) SYLLABUS

Free groups, subgroups, geometric representation, applications (Howson, Hanna Neuman). Group actions on sets, trees and other geometric objects. Orbits, stabilizers, space of orbits, applications (free groups, amalgamated free products, HNN-extensions geometric automorphisms). Groups as geometric objects, ends of groups, Stallings Theorem, applications.
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(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Communication with students via e-mail	
TEACHING METHODS	Activity	Semester workload
	Lectures	39
	Independent study	148.5
	Assignments	62.5

	Course total (25 per ECTS)	250
STUDENT PERFORMANCE EVALUATION	<p>Student evaluation is done in Greek through a written examination which includes short-answer equations and problem solving.</p> <p>For students with disabilities, evaluation takes place via oral exams.</p>	

(5) ATTACHED BIBLIOGRAPHY

1. J.-P. Serre, Trees, Springer-Verlag, Berlin
2. D.E. Cohen, Combinatorial Group Theory: a topological approach, LMS 14.