COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		**SEMESTER**	**E**
COURSE TITLE	HISTORY OF EUCLIDEAN AND NON-EUCLIDEAN GEOMETRIES		
INSTRUCTOR			
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**CREDITS**
		4	6
COURSE TYPE	Special 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
General Competences
Working independently. Team work. Working in an interdisciplinary environment.

(3) SYLLABUS

History, development and philosophical significance of the non-Euclidean geometry: Foundation in Euclid's "Elements" and the parallel postulate. Attempts to prove the parallel postulate (Ptolemy, Proclus, Nasiraddin-at-Tusi). Precursors to non-Euclidean geometry (Playfair's Postulate, Wallis, Saccheri, Legendre, Lambert, Gauss). Neutral and Hyperbolic Geometry (J. Boyai, Lobatschefskij). Spherical geometry. Models of Hyperbolic Geometry (Beltrami, Klein-Berltrami, Poincaré). A flat model of spherical model. The concept of space before and after the discovery of the non-Euclidean geometry (Kant, Poincaré). Formal axiom systems. Hilbert' s "Grundlagen der Geometrie".

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	• Communication with students via e-mail • Uploading course material on moodle system.	
TEACHING METHODS	***Activity***	***Semester workload***

	Lectures	52
	Independent study	98
	Course total (25 per ECTS)	***150***
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 multiple choice questionnaires. For students with disabilities, evaluation takes place via oral exam.	

(5) ATTACHED BIBLIOGRAPHY

1. Davis M. Donald. (2008). Η Φύση και η Δύναμη των Μαθηματικών. Πανεπιστημιακές Εκδόσεις Κρήτης.
2. Leonard Mlodinow. (2007). Το Παράθυρο του Ευκλείδη. Αθήνα: Εκδόσεις Κάτοπτρο.