COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		**SEMESTER**	**A**
COURSE TITLE	ELEMENTARY ANALYTIC GEOMETRY		
INSTRUCTOR	Charalambos Tsichlias		
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
Knowledge and understanding of vector calculus in plane and in space. Study of basic geometric concepts and relationships between them: Line in the plane, plane in space, conic sections, curves in plane and space, Surfaces in space.
General Competences
Working independently. Team work. Working an interdisciplinary environment.

(3) SYLLABUS

Vectors in plane and space, vectors sum, angle between two vectors, internal and external vectors product. Linearly dependent-independent vectors. Cartesian coordinates, metric properties, change of coordinates system.

Line and cycle in the plane. Parametric, vector and analytic equations. Angle between two lines. Plane orientation. Distance from point to line. Ellipse, hyperbola, parabola. Conic sections. Tangent lines. Polar coordinate system.

Plane in space. Relative position of two planes in space. Distance from point to plane. Line in space. Angle between two planes, angle between two lines. Distance from point to line in space. Relative position of two lines in space. Sphere and cycle in space. Analytic and parametric equations. Tangent plane to sphere, Tangent line to cycle. Spherical coordinate system. An introduction to surfaces in space.

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 lectures
USE OF INFORMATION AND	Communication with students via e-mail

COMMUNICATIONS TECHNOLOGY	
TEACHING METHODS	
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

Activity	***Semester workload***
Lectures	52
Independent Study	98
Course total (25 per ECTS)	***150***

(5) ATTACHED BIBLIOGRAPHY

1. Γραμμική Άλγεβρα και Αναλυτική Γεωμετρία, Θανάσης Χρυσάκης.
2. Αναλυτική Γεωμετρία, Στυλιανός Ανδρεαδάκης.