COURSE OUTLINE

1. GENERAL

SCHOOL	NATURAL SCIENCES
DEPARTMENT	MATHEMATICS
LEVEL OF COURSE	UNDERGRADUATE
COURSE CODE	MAT_DI231

COURSE CODE	MAT_DI231	**SEMESTER OF STUDIES**	4th

COURSE TITLE	EUCLIDEAN GEOMETRY AND ITS TEACHING

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
Lectures and Tutorials	4	6
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Elective course
PREREQUISITE COURSES:	
TEACHING AND ASSESSMENT LANGUAGE:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBPAGE (URL)	

2. LEARNING OUTCOMES

Learning outcomes
The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A
* *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
* *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning*

and Appendix B
* *Guidelines for writing Learning Outcomes*

By the end of the course the student will get basic knowledge of Plane Geometry and Solid Geometry. Beginning with the Axioms of Euclidean Geometry, he/she learns basic theorems, prepositions, corollaries and their proofs. In addition, he/she gets acquainted with geometric constructions and geometric loci.

A student, who has successfully completed the course, will be able to develop the critical thinking of Euclidean Geometry and to comprehend the proof methods. He/She can proof conclusions regarding triangles, quadrilaterals, circles, polygons, as well as polyhedra, cylinders, spheres, cones, Besides, he/she will be able to make geometric construction and study geometric loci using the analytic-synthetic heuristics.

- Decision making.
- Detect, analysing and synthesizing data.
- Autonomous work.
- Team work.
- Developing critical thinking.

3. COURSE CONTENT

Plane Geometry. Non-defined terms, Definitions, Axioms. Basic theorems for triangles, quadrilaterals, circles, polygons. Geometric loci, geometric constructions, using the analytic-synthetic heuristics. Surface area, regular polygons, Archimedes' Axioms, circle measuring.

Solid Geometry. Space Axioms. Parallel planes, orthogonality, Theorem of the three perpendiculars. Geometric constructions in space using the analytic-synthetic heuristics. Solids, the Platonic Solids, the sphere. Surface area and volumes of solids.

Topics of History and Didactics are discussed for every subject.

4. TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD *Face-to-face, Distance learning, etc*	Lectures (face to face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	

TEACHING ORGANIZATION *The manner and methods of teaching are described in detail.*	*Activity*	*Semester workload*
	Lectures	52
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.	Solving suggested exercises	65
	Personal study by the student	30
The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS	Final examination	3
	Total number of hours for the Course (25 hours of work-load per ECTS credit)	***150***

STUDENT ASSESSEMNT *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	**Assessment Language:** Greek **Assessment Language for Erasmus students:** It will be considered accordingly. **Assessment methods:** Written final course exam including: ✓ Comprehensive questions ✓ Problem solving Minimum passing grade: 5 Μαximum passing grade: 10

5. RECOMMENDED LITERATURE

(*in Greek*)
- Πάμφιλος Πάρις. *Γεωμετρικόν*. Εκδόσεις ΙΤΕ – Πανεπιστημιακές Εκδόσεις Κρήτης, 2016.

ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΠΑΤΡΩΝ