COURSE OUTLINE

(1) GENERAL

SCHOOL	POYTECHNIC SCHOOL		
ACADEMIC UNIT	DEPARTMENT OF ARCHITECTURE ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ARC 2302	SEMESTER	3 THIRD
COURSE TITLE	GEOMETRY		

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*	WEEKLY TEACHING HOURS	CREDITS
	4	4
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*	General Background
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS	No
COURSE WEBSITE (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*

The aim is that the students completing the course will be able to:
1. Design flat (2D) representations and images of three-dimensional objects, applying the Representation Methods currently used by Architects and Engineers, with scientifically documented - and not only empirical - design knowledge. In this way, they will be able to meet the design requirements of any object in the various branches of their specialty, having a full understanding of the reason for choosing each specific method.

2. To know essentially the methods of creating the Images-Representations, which appear on computer screens, when CAD programs are used and to interpret the resulting design results.

3. To understand: a. The individual geometric relationships of objects in space. b. The geometric relationships of three-dimensional objects with their two-dimensional representations.

4. Recognize the geometric solids that appear in the object under study, making it easier to manage the subject.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
……
Others…
…….

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Production of free, creative and inductive thinking,
Working independently,
Team work, Production of new research ideas

(3) SYLLABUS

CONCISE DESCRIPTION

A. Study of second grade surfaces, e.g. Cone, Cylinder, Sphere, Ellipsoid, Hyperbolic Paraboloid, etc. and other surfaces like Spiral

B. Basic Principles of Representations.

1. Axonometric.
2. Representation with Altitude/Elevation (on a projection plane with altitude).

Γ. Applications of the Two Representational Methods.

1. Representations of geometric objects using the two Representation Methods.
2. Examples. Exercises. Topics.

D. Representation of objects in three-dimensional space in general, using all four Representation Methods, namely the Monge Method, Axonometry, Perspective and Elevation, emphasizing issues of architectural interest. Comparison of design results.

E. Sections and surface developments with the Monge Method.

G. Application of the principles of Silhouette/Shading to the Axonometry Method. Examples. Topics.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	In Classroom, Face to Face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education*	Yes, Use of E-Class Platform Use of ICT in teaching, laboratory education, communication with students

TEACHING METHODS

The manner and methods of teaching are described in detail.
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.

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

Activity	*Semester workload*
Lectures	26
seminars, laboratory practice	24
Course total	*50*

STUDENT PERFORMANCE EVALUATION

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.

1. With short answer questions or simple problem-solving during lectures.
2. With the correction of a weekly topic.
3. With the correction of a semester assignment.
4. With the semester's final exam.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Λευκαδίτης Γεώργιος, Εξαρχάκος Γεώργιος, *Μέθοδοι Παραστάσεων, Μέθοδος Monge-Αξονομετρία-Προοπτική-Υψομετρία, Σκιαγραφία*
2. Μαρκάτης Στυλιανός, *Παραστατική Γεωμετρία*
3. Γεωργίου Δημήτρης, *Παραστατική Γεωμετρία*

- Related academic journals: