# COURSE OUTLINE

## (1) GENERAL

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>ENGINEERING SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC UNIT</td>
<td>CIVIL ENGINEERING DEPARTMENT</td>
</tr>
<tr>
<td>LEVEL OF STUDIES</td>
<td>UNDERGRADUATE</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>2302511</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>2</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>DESCRIPTIVE GEOMETRY</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th></th>
<th>WEEKLY TEACHING HOURS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory exercises</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).

**COURSE TYPE**  
Special background, skills development

**PREREQUISITE COURSES:**

<table>
<thead>
<tr>
<th>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</th>
<th>Greek</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS THE COURSE OFFERED TO ERASMUS STUDENTS</td>
<td></td>
</tr>
<tr>
<td>COURSE WEBSITE (URL)</td>
<td><a href="http://vplace.teipir.gr/2302511">http://vplace.teipir.gr/2302511</a></td>
</tr>
</tbody>
</table>
(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

Upon completion of the course, students will be able to:
1. Recall the fundamental concepts of Descriptive Geometry.
2. Relate and apply the theory and principles of Descriptive Geometry methods as to represent the three-dimensional objects in two-dimensional views.
3. Perform the tools and techniques as to solve practical problems in engineering profession.
4. Analyze the problems and produce solutions through visualization and reasoning.
5. Interpret and compare the objects’ volumes and geometric forms through the information given in the drawings.

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, analysis and synthesis of data and information, using the necessary geometric representation principles.
- Creative thinking to solve representation problems.
- Work autonomously as well as in teams.

(3) COURSE CONTENT

Theory

3-4. Monge system: Parallel and orthogonal projection (surfaces, cylinder, cone, sphere, hyperboloid paraboloid)
5-6. Axonometric projection.
7-8-9. Perspective.
10. Intersection of surfaces.
2. Orthogonal projection – pyramids.
5. Orthogonal projection – cone.
6. Axonometric projection -I.
7. Axonometric Projection -II.
8. Two-point perspective –I.
9. Two-point perspective –II.
10. Intersection of cylinders.
11. Roofs –I.
12. Roofs –II, III.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY
Face-to-face, Distance learning, etc.

USE OF INFORMATION AND
COMMUNICATIONS TECHNOLOGY
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

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, etc.

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

Evaluation language: Greek.

Evaluation procedure
THEORY
- written examination (80%),
- small scale exercises during the lecture's time (20%).

LABORATORY
- Written examination.
- Laboratory work.
(quality and quantity assessment)

All criteria are accessible to the students through website.
(5) ATTACHED BIBLIOGRAPHY

**Main sources in Greek language**

**Main sources in foreign languages**
- Low David Allan (2007), *Practical Solid or Descriptive Geometry*, 2 volumes, USA: Watchmaker Publishing.