# 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>2301505</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>1</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>TECHNICAL DRAWING</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>6</td>
</tr>
<tr>
<td>Laboratory exercises</td>
<td>4</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:

### LANGUAGE OF INSTRUCTION and EXAMINATIONS:

Greek

### IS THE COURSE OFFERED TO ERASMUS STUDENTS

### 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

Upon completion of the course, students will be able to:
1. Recall the geometric characteristics of the three-dimensional objects.
2. Relate and apply the theory and principles of the methods and steps as to represent the three-dimensional objects in two-dimensional views.
3. Perform the organization of a complete representation of the object under investigation using the professional language of drawing.
4. Analyze the building volumes in basic Euclidian solids and compare them.
5. Combine the engineering drawing lines and other symbols and compose the space volumes represented.
6. Interpret and compare the objects’ volumes and geometric forms through the information given in the drawings.
7. Be able to work with their fellow students, to create and present both at individual and group level a case study from its initial stages up to the final evaluation.

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, analysis and synthesis of data and information, using the necessary geometric representation principles.
Adapting to new situation: complete description and appropriate presentation of information as to the idea or the objet under investigation could be realized.
Work autonomously as well as in teams.

(3) COURSE CONTENT

Theory
Common and specific geometrical constructions; notions and terms in plane and solid Euclidean Geometry; Euclidean solids’ description and features.
Methodology of projections according to the Monge’s system (plans, sections, views).
Methodology of axonometric projection. Introduction.
Analysis
1. Geometric solids 1
2. Geometric solids 2
3. Orthogonal projection (plans and views – prisms, right angles)
4. Orthogonal projection (plans and views – prisms, right angles)
5. Orthogonal projection (plans and views – prisms, all angles)
6. Orthogonal projection (plans and views – pyramids, roofs)
7. Orthogonal projection (plans and views – surfaces)
8. Orthogonal projection (sections)
9. Orthogonal projection (sections)
10. Orthogonal projection (sections)
11. Axonometric projection (prisms, isometric)
12. Axonometric projection (pyramids, isometric)

Laboratory
Synthesis of Euclidean solids oriented to the architectural and structural design of buildings: drawing of 2D projections according with the Monge’s system (plans, sections, views) and of isometric projection.

Analysis
The laboratory applications have been aligned with the civil engineering practice with emphasis in building forms.
1. Geometric constructions (Plane Geometry)
2. Geometric constructions (Plane Geometry)
3. Orthogonal projection (plans and views – prisms, right angles)
4. Orthogonal projection (plans and views – prisms, right angles)
5. Orthogonal projection (plans and views – prisms, all angles)
6. Orthogonal projection (plans and views – pyramids, roofs)
7. Orthogonal projection (plans and views – surfaces)
8. Orthogonal projection (sections)
9. Orthogonal projection (sections)
10. Orthogonal projection (sections)
11. Axonometric projection (prisms, isometric)
12. Axonometric projection (pyramids, isometric)
13. Isometric plans and sections.

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>Lectures and exercises, face-to-face.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHING METHODS</td>
<td>Activity</td>
</tr>
<tr>
<td>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.</td>
<td>Lectures</td>
</tr>
<tr>
<td>Laboratory exercises</td>
<td>52</td>
</tr>
<tr>
<td>Personal study</td>
<td>44</td>
</tr>
<tr>
<td>Preparation for a case study development</td>
<td>28</td>
</tr>
</tbody>
</table>
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.

| Course total | 150 |

**STUDENT PERFORMANCE EVALUATION**

**Evaluation language:** Greek.

**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.

**Evaluation procedure**

**THEORY**
- written examination (80%),
- small scale exercises during the lecture's time (10%),
- small scale research project (10%).

**LABORATORY**
- written examination (80%),
- laboratory exercise (20%).

All criteria are accessible to the students through website.

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(5) **ATTACHED BIBLIOGRAPHY**

**In Greek language**

**Main sources in foreign languages**


