

COURSE OUTLINE

(1) GENERAL

SCHOOL	UNIVERSITY OF THESSALY		
ACADEMIC UNIT	DEPARTMENT OF CIVIL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	GK0501	SEMESTER	1st
COURSE TITLE	Technical Drawings and CAD		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>		WEEKLY TEACHING HOURS	CREDITS
		4	3
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialized general knowledge, skills development</i>	General Background and Skill Development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS			
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes <i>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.</i> <i>Consult Appendix A</i> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
The course focuses on developing the ability to understand and apply basic design principles, which are fundamental tools for students' future courses in design. The assimilation of general design knowledge is essential for a Civil Engineer and forms the core of their education. In the engineering world, technical drawing is a universal language of communication.

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?

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

The course aims to develop the following skills:

- Data analysis and synthesis using necessary technologies
- Adaptation to new situations
- Decision-making
- Independent work and teamwork
- Work in international and interdisciplinary environments
- Production of new research ideas
- Project planning and management
- Respect for diversity and multiculturalism
- Environmental sensitivity
- Social, professional, and ethical responsibility, and gender sensitivity
- Critical and self-critical thinking
- Promotion of free, creative, and inductive thinking

(3) SYLLABUS

Introduction to the basic techniques for rendering structural components. Basic drafting equipment. Line drawing. Types of lines. Elements of spatial representation. Projection geometry. Scales. Architectural drawing. Construction drawing. Representation of building structures. Floor plans, elevations, sections, staircase details. Dimensions. Introduction to computer-aided design (CAD) software: Basic commands, drawing floor plans, sections, elevations, dimensioning, text in drawings, printing plans. Project work.

1. Installation and execution of AutoCAD, an overview of the AutoCAD environment, and the basic principles of drafting with AutoCAD. Basic screen management and drawing commands.
2. Organizing work in AutoCAD, digital drafting – template drawings. General settings in the design.
3. Basic editing commands and general settings in the design – template drawings.
4. Advanced drafting commands: Geometric calculations, straight and semi-straight lines, the Pline command, the Boundary (or Bpoly) command.
5. Advanced drafting commands: Multiple lines and advanced commands.
6. Writing and editing text.
7. Blocks, external reference files, and images.
8. Hatching.
9. Dimensioning.
10. Other editing commands.
11. AutoCAD Express Tools.
12. 3D modeling: Solid objects and editing 3D objects.
13. Printing the work.
14. Presenting the work – Photorealism.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	- Digital slides - Videos - Modern software - E-class and webmail	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>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.</i> <i>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</i>	<i>Activity</i>	<i>Semester workload</i>
	Lectures	56 hours
	Assignments	22 hours
	Exam preparation	3 hours
	Exams	3 hours
	Course total	84 hours
STUDENT PERFORMANCE EVALUATION	Assessment includes:	
Description of the evaluation procedure <i>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</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	- Mandatory CAD exercises (40% of the final grade). - Written examinations at the end of the semester (60% of the final grade). Evaluation Criteria (applicable to both written exams and exercises): It is assessed whether the examinee has the ability: To represent an object or construction with clarity and accuracy without requiring any additional technical description. The evaluation criteria are explained in class at the beginning of the semester.	

(5) ATTACHED BIBLIOGRAPHY

-Suggested bibliography:

Kappos, G. (2022). *Work with AutoCAD 2022*. Kleidarithmos Publications. (In Greek)

Kappos, Y.T. *Learn AutoCAD through architectural examples*. Tziola Publications. (In Greek)

Sarafis, H., Tsempekli, S., Kazanidis, I. (2016). *Technical Drawing with AutoCAD*. Disigma Publications. (In Greek)

Bayuk, S. *Technical Designs - Basic Principles*. Sofia Publications. (In Greek)