

1.1.1 Technical Drawing

GENERAL

SCHOOL	Engineering		
ACADEMIC UNIT	CIVIL ENGINEERING		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΔOM001	SEMESTER	1st
COURSE TITLE	Technical Drawing		
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	
Lectures, exercises.	4	5	
<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, specialised general knowledge, skills development</i>	Scientific Field		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://elearning.cm.ihu.gr/		

LEARNING OUTCOMES

<p>Learning outcomes</p> <p><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></p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> • 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 		
<p>Upon completing this course students should be able to corelate real world geometry with graphic representations through projection, observe geometric principles in the built environment and relate them to graphic representations, represent 3D objects in 2D orthographic projections, produce hand-drawing projections of buildings in scale (plans, sections, elevations), use lineweights to convey spatial information, identify building components in orthographic drawings, read symbols related to the structure and the building components, organize drawings in sheets and place appropriate dimensions for drawings in the scale of 1:50.</p>		
<p>General Competences</p> <p><i>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></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> </td> <td style="width: 50%; border: none;"> <i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> </td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i>	<i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
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<i>Team work</i> <i>Working in an international environment</i> <i>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i>	<i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>Others...</i>
Search for, analysis and synthesis of data and information, with the use of the necessary technology, Project planning and management Adapting to new situations, Decision-making, Working independently, Team work, Production of free, creative and inductive thinking.	

SYLLABUS

The course is structured in two parts: the first part is dedicated to introducing the main principles of descriptive geometry and the relation of physical objects with their geometrical representation on paper. Students work on exercises on descriptive geometry, surface developments and orthographic projections. The second part implements the orthographic projections on the drawing of objects in space. The students learn to measure, document and produce orthographic projections of physical objects in scale drawings (1:5). They learn to make orthographic projections of buildings in scale (1:100, 1:50), axonometric projections, while at the same time they get acquainted with the building's structure and components. The students submit 3 projects of paper and ink drawings at the end of the semester, while they also participate in a final examination on technical drawing.

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>	Powerpoint presentations, E-learning platform for educational material.		
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>	Activity	Semester workload	
	Lectures	26	
	Practice/exercises	26	
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	Individual study	35	
	Project(s)	43	
		Course total (26 hours workload per ECTS credit)	130
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <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>	Compulsory individual assignments.(40% of final grade) Final written examinations: short-answer questions, drawing assignment (60% of final grade).		

ATTACHED BIBLIOGRAPHY

Malikouti, St. "TECHNICAL DRAWING: Elements of theory and methodology for applications", Sygxroni Publications, Athens, 2018. (in Greek)

Malikouti, St., Markopoulou, N., "ARCHITECTURAL DRAWING: Methodology for drawing in scale of 1:50", Sygxroni Publications, Athens, 2017. (in Greek)

Pavlidis, I., "Line Drawing", Ziti Publications, Thessaloniki, 1997, (in Greek)

Bayouk, S., "Technical Drawing", Sofia Publications, Thessaloniki, 2016. (in Greek)

Markatis, S., "Descriptive Geometry", TSOTRAS Publications, Athens, 2016. (in Greek)

Fountas, Gr., "Descriptive Geometry", Fountas Publications, Athens, 2005. (in Greek)

Lefkaditis, G., "Elements of Descriptive Geometry Part I", private publication, Athens, 2010. (in Greek)

Lefkaditis, G., "Elements of Descriptive Geometry Part II", private publication, Athens, 2008. (in Greek)

Lefkaditis, G., "Methods of Representation: Axonometry, Altimetry, Rendering", private publication, Athens, 2006. (in Greek)

Ching Fr., "Architectural Graphics", 6th edition, John Wiley and Sons, Inc., New Jersey, 2015