

## COURSE OUTLINE

### (1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
DEPARTMENT	ELECTRICAL AND ELECTRONICS ENGINEERING		
LEVEL OF STUDIES	UNDER GRADUATE		
COURSE CODE	EEE.3.5	SEMESTER	3
COURSE TITLE	Computer-aided Design of Electrical Installations		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <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
Laboratory Exercises		2	
<b>Total</b>		2	3
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Special Background Course		
<b>PREREQUISITE COURSES:</b>	NO		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek (official)		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	NO		
<b>COURSE WEBSITE (URL)</b>	<a href="http://www.eee.uniwa.gr">www.eee.uniwa.gr</a>		

## (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*

This course provides participants with all the necessary skills and knowledge to design electrical installations and electronic circuits.

On completion of the course, students should be able to

- define and design the necessary aspects of the simple electrical and electronic components, select sections and to place dimensions, using symbols, patterns and rules
- distinguish, interpret and explain clearly basic electrical and electronic circuits and describe how their operation
- analyze and compose plans for electrical and electronic installations / circuits, making use of regulations, standard symbols and standards
- make use of design programs as well electrical and electronic installations / circuits
- choose when designing electronic circuits the most suitable for use components based on technical and economic standards
- simulate basic electronic circuits and optimize their operation
- know the conditions for searching and finding electronic devices in the market or in specialized laboratories for the implementation of any kind electronic circuits
- prepare plans for electromechanical installations and electronics computer-assisted circuits
- build symbol libraries and standard electrical and electronic circuits
- print and distribute designs electronically
- perform topics-tasks, related to the subject of study to apply in their subsequent professional careers.

### 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...*

*.....*

The course aims at fostering the following capabilities:

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Production of free, creative and inductive thinking

### (3) COURSE CONTENT

<ul style="list-style-type: none"> <li>• Need for Technical Drawing.</li> <li>• Classification of Drawings.</li> <li>• Principles of Drawing: Drawing Sheet, Scales, Lines, Lettering.</li> <li>• Orthographic Projections (Views).</li> <li>• Presentation of Views.</li> <li>• Designation and Relative Positions of Views.</li> <li>• Selection of Views.</li> <li>• Sectional Views: Full section, Half Section. Dimensioning.</li> <li>• Electrical designing. General meanings and knowledge. Regulations. Conductors, cables, tubes, interior electrical installations (IEI) switch boards.</li> <li>• Electrical and Electronic Circuits drawings and diagrams.</li> <li>• Introduction to Computer Aided Drawing (CAD).</li> <li>• Basics of AutoCAD and OrCAD.</li> <li>• Getting comfortable with the AutoCAD and OrCAD Environment.</li> <li>• Using AutoCAD to Design of Electrical Installations</li> <li>• Using OrCAD to design electronic circuits</li> </ul>
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### (4) TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face, laboratories	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	Teaching using ICT, Laboratory Education using ICT, Communication and Electronic Submission	
<b>TEACHING METHODS</b> <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>	<b>Activity</b>	<b>Semester workload</b>
	Laboratory Exercises	26
	Preparation for Homework on case studies (individual or group work)	39
	Personal study	25
	Course total	<b>90</b>
<b>STUDENT PERFORMANCE EVALUATION</b> <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>	<p>Written examination: 100%</p> <p>Optional project preparation and presentation of up to 20%, less than the proportion of written examination</p>	

## (5) ATTACHED BIBLIOGRAPHY

1. A. Goutis "Design of Electrical Installations ", Part A, Editions ION (in Greek)
2. A. Goutis " Design of Electrical Installations ", Part B, Editions ION (in Greek)
3. Karatrasoglou I. " Design of Electrical Installations ", 1998, Editions ION (in Greek)
4. G. Kappos "Working with Autocad 2011", Editions TZIOLA (in Greek)
5. D. Panetsos, Sp. Panetsos, "Discovering AUTOCAD", Editions OPEN, (in Greek)
6. S.G. Mouroutsos, G. Malliaris, "Technical Design" Editions TZIOLA (in Greek)
7. Ap. Kokkosis, "Project Management and CAD Design", Editons Sixroni Ekdotiki (in Greek)
8. Chatsigaidas A., Koutsinou, "Electronic Design-construction & simulation printed circuits", Editions Giapoulis
9. Chatsiprokopiou M. "Computer-Aided Design and Simulation of Circuits", Self-edition (in Greek)
10. Lectrurer Notes (in Greek)