EEE.8.1.6 Special Electrical Installations

COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
DEPARTMENT	ELECTRICAL AND ELECTRONICS ENGINEERING		
LEVEL OF STUDIES	UNDER GRADUATE		
COURSE CODE	EEE.8.1.6	SEMESTER	8
COURSE TITLE	Special Electrical Installations		

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*	WEEKLY TEACHING HOURS	CREDITS
Lectures	3	
Total	3	4
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialization Course
PREREQUISITE COURSES:	NONE
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek (official)
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	www.eee.uniwa.gr

(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*

The course dealS with new technologies in the design of **special building electrical installations (Smart Electrical Installations, Security systems, Uninterruptible Power Supply Systems – UPS, Back-up Power Supply Systems , Structured Cabling).** The aim of the course is the in-depth knowledge and critical understanding of the theory and principles of use of new technologies in the design of **special building electrical installations**

Upon completion of the course, students will have acquired:

- Knowledge and skills in modeling, simulation, optimization and design of special building electrical installations.
- Knowledge and synthesis skills, construction, programming, maintenance, supervision of operation, debugging and design system repair of special building electrical installations.

Specifically, students will be able to:

- describe and identify the parts, choose the functions and operations of a special building electrical installation and draw up specifications.
- explain the operation of a special building electrical installation and assess performance.
- Have a proven critical ability so they can compare and evaluate different special building electrical installations.
- Perceive, interpret and clearly explain issues related to special building electrical installations, generalize the problem, correctly appreciate in order to draw right conclusions.
- compose and organize new applications using a special building electrical installation.
- Work with their fellow students, create and present, both at individual and group level, a case study from its initial stages up to final evaluation, and finally be able to propose new ideas and solutions.

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*

Working in an international environment *Working in an interdisciplinary environment* *Production of new research ideas*	*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

The core modules of the course include:

- Smart Electrical Installations - (EIB/KNX, DUPLINE, etc)
- Security systems
- Uninterruptible Power Supply Systems – UPS
- Back-up Power Supply Systems
- Structured Cabling

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures and exercises, face-to-face. Distance education (auxiliary way)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Teaching using ICT, Communication and Electronic Submission
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*	

Activity	*Semester workload*
Lectures	39
Preparation for Homework on case studies (individual or group work)	39
Project implementation and presentation	19
Personal study	23
Course total	***120***

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,*	Written examination: 100% • multiple choice questionnaires

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.*	• short-answer questions • open-ended questions • problem solving Optional project preparation and presentation of up to 20%, less than the proportion of written examination

(5) ATTACHED BIBLIOGRAPHY

1. Touloglou S. «Structured Cabling & Smart Electrical Installations (EIB), Editions ION (in Greek)
2. Touloglou S. «EIB/KNX for Electrical Installations» , Editions ION (in Greek)
3. Sarris G. «EIB/KNX. for Electrical Installations Professional», Editions TZIOLAS (in Greek)
4. Sarris G. «EIB/KNX: The new Technical Building Electrical Installation in Practice using ETS Professional», Γ. Σαρρής, Editions TZIOLAS (in Greek)
5. «Electronic security systems», Garyfallos George, 2008, Editions ION (in Greek)
6. "The UPS Book". Harry Peterson, Fiskars Power Systems Oy.1996
7. CENELEC: Uninterruptible Power Supply Systems (UPS) Part 1: General and Safety Requirements, EN 50091-1 1994.
8. 'History of CCTV technology'', http://www.cctvsystems.com/history-of-cctv
9. Bitzionis, V "Industrial Electrical Installations", 2011, Editions Τζιόλας (in Greek)
10. Dokopoulos P. "Consumers Electrical Installations", 2005, Editions ZITIS (in Grreek)
11. http://www.knx.org/
12. http://www.abb.gr/
13. http://www.dupline.gr/
14. www.bosch.com
15. www.futuretech.gr
16. www.heitel.com
17. www.ipc.on.ca
18. Lecturer Notes (in Greek)