

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF APPLIED ARTS & CULTURE		
ACADEMIC UNIT	DEPARTMENT OF GRAPHIC AND VISUAL COMMUNICATION DESIGN		
LEVEL OF STUDIES	6 Undergraduate		
COURSE CODE	N1-7120	SEMESTER	7
COURSE TITLE	ENGINEERING OF PRINTING SYSTEMS – ELECTRONICS AND AUTOMATION		
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		4	6
Laboratory Exercises			
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Specialisation course		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
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> • 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
At the completion of this course students will be able to: - Understand the basics of electronics in modern printing machines - Can make measurements of the suitability of the electronic equipment and diagnose its good or bad operation -Can use measuring instruments (multimeter) and communicate internationally regarding the results. - Understand the importance of the proper operation of an electrical installation to complete printing processes accurately and consistently - Is able to isolate and preserve the proper functioning of the electrical installation and the electronic parts of the printing equipment

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
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Others...
.....*

- Search, analysis and synthesis of data and information, using the necessary technologies
- Decision making
- Working individually
- Teamwork
- Work in an interdisciplinary environment
- Production of new research ideas
- Respect for the environment
- Demonstration of social, professional and moral responsibility in the workplace
- Promoting free, creative and inductive thinking
- Technical thinking and offering applied proposals and solutions in the production process

(3) SYLLABUS

- Basic terms and structure of printing systems
- Structure of mechanical and electronic parts
- Automation in printing systems - power supply, mechanical parts tests, coincidences, rollers and adjustments
- Production data management, operation and capture software applications - jdf-cip4 systems
- Basic concepts of electronic signals and systems. Analog and digital systems.
- Basic electrical quantities, mains components, measuring instruments, errors, Thevenin theory, Norton theory, first- and second-order circuits, cube method, loop method, sinusoidal state.
- Evolution and characteristics of semiconductor and integrated circuit technology. Microelectronics. Moore's law. Solid state and conductor physics. Diodes.
- Theory, operation and application circuits. Bipolar junction transistor (BJT) and field effect transistor (FET). References in theory, model, characteristics, polarization and basic connections. Application circuits. Differential and operational amplifier, circuits and applications. Modern sequential circuits. Analog to digital (A / D) and digital to analog (D / A) converters.

(4) TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face to face, written examination, visit to industrial and craft sites	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of Computers for: A) The teaching of the theoretical part B) Communication with students C) The execution of the necessary exercises	
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	
	Bibliography study and analysis	
	Writing – Performing Exercises	
	Visit to the industry	
Course total	150	
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>	Greek, A. Written examination with short questions response and short development - resolution problems (theoretical part), B. References on the subject of laboratory exercises, Test questions multiple choice and short development subjects, oral examination with the use printing presses (laboratory part, if any)	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography: 1. Γκαρούτσος, Γιάννης Β. (2008). Ηλεκτρικά κυκλώματα, Εκδότης : SPIN, Αθήνα. 2. Sedra, Adel S. Smith, Kenneth C. (2017). Μικροηλεκτρονικά κυκλώματα, Παπασωτηρίου, Αθήνα. 3. Perozzo, James (2003). Μέθοδοι ανίχνευσης βλαβών ηλεκτρονικών κυκλωμάτων Ίων, Αθήνα. 4. Χατζόπουλος, Αλκιβιάδης, Κωνσταντίνου, Δημήτριος, Μπόντζιος, Γεώργιος Ι., Αμπού Φάρχα, Σάμι (2012). Spice : ανάλυση και σχεδίαση ηλεκτρικών και ηλεκτρονικών κυκλωμάτων, Εκδόσεις Τζιόλα, Θεσσαλονίκη.
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