COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING		
ACADEMIC UNIT	INFORMATICS AND COMPUTER ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE		**SEMESTER**	**2**
COURSE TITLE	**CIRCUIT THEORY**		
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	
	TUTORIALS	2	
	LAB PROJECTS	1	
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		6	5
COURSE TYPE general background, special background, specialised general knowledge, skills development	General background		
PREREQUISITE COURSES:	Math. Analysis, Physics		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS			
COURSE WEBSITE (URL)	http://eclass.uniwa.gr		

(2) LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Understand circuit theory effectively use instruments for measuring electric voltage, current etc, as well as become familiar with related simulation software packages.
- Use and assess the methods of circuit analysis, understand and make use of graphs and diagrams regarding voltage, power, energy, frequency response etc.
- Analyze and examine unknown electric circuits and determine their time and frequency response, transfer function, circuit order etc.

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	Production of free, creative and inductive thinking
Working in an interdisciplinary environment	……
Production of new research ideas	Others…
	…….

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently or team work
- Decision making

- Production of new research ideas

(3) SYLLABUS

- Introduction to circuit theory, definitions, signals.
- Circuit elements – power – energy.
- Kirchhoff's laws – methods of analysis (nodal, mesh).
- Circuit theorems.
- First and second order circuits.
- Step – unit response
- AC circuits – phasors.
- Frequency response.
- Analog filters

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	• Use of the university's online teaching platform for posting theory, exercises and various resources. • Use of e-mail and the online teaching platform for communication with the students.
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 Tutorials: 13 Lab Projects: 13 Projects: 20 Individual study: 40 Course total: **125**
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, 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.	Language of evaluation: Greek The final marks will be extracted as the weighted sum of a final written exam (75%), a lab project and a lab exam (25%).

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Παπαδόπουλος Κ., Ανάλυση Ηλεκτρικών Κυκλωμάτων, 2η έκδοση, Εκδόσεις Τσιότρα, 2017.
2. Alexander C. Sadiku M., Ηλεκτρικά Κυκλώματα, 6η έκδοση, Εκδόσεις Τζιόλα, 2020.