CIRCUIT THEORY II

1	Course Title:	CIRCUIT THEORY II
2	Course Code:	EEM2102
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. FİGEN ERTAŞ
15	Course Lecturers:	Yrd. Doç. Dr. Uğur Yalçın
16	Contact information of the Course Coordinator:	E-posta:fertas@uludag.edu.tr Tel: (224) 294 2017 Adres: Elektronik Mühendisliği Bölümü 5. Kat, No:512
17	Website:	http://home.uludag.edu.tr/~fertas
18	Objective of the Course:	To provide a good understanding of basic concepts of AC circuit behavior, explain the concept of steady state, apply phasor analysis to AC circuits in sinusoidal steady state, analyze the frequency response of circuits containing inductors and capacitors, apply circuit theorems to AC circuits in sinusoidal steady state, analyze three-phase circuits, analyze filter circuits and simple two-port circuits
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	Gain sufficient knowledge on circuit elements and their usage in circuits; the ability to model and solve electric circuit problems using theoretical and practical knowledge.
	2	Gain the ability to identify, model, and solve complex electric circuit problems; the ability to select and apply appropriate analysis and modelling methods for these problems.
	3	Gain the ability to design and conduct complex experiments and to collect, analyze and interpret data for electric circuit problems
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21	Course Content:	
	Course Content:	

Week	Theoretical	Practice
1	Sinusoidal sources, Complex Numbers	
2	Phasor, Impedance and Admitance	
3	Node Voltage and Mesh Current Methods with Phasors	
4	Superposition, Source Transform, Thevenin and Norton Theorems	
5	Max Power Theorem	
6	Frequency Response	
7	Resonances Circuits	
8	Midterm Exam + Review of Past Lecturers	
9	Filter Circuits	
10	Circuit Analysis in s-domain	
11	One-port networks, y parameters, Equiv. circuit & analysis of terminated 2-port, z & h parameters, 2-port interconnections	
12	Three-phase circuits	
13	Mutual inductance, coefficient of coupling, stored energy, the dot convention, Mutual inductance: s-domain and phasors	
14	Review	

| 22 | Textbooks, References and/or Other | 1. Introduction to Electric Circuits, 5th Edition, |

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	7	2.00	14.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	26.00	26.00
Others	0	0.00	0.00
Final Exams	1	26.00	26.00
Total Work Load			150.00
Total work load/ 30 hr			5.00
ECTS Credit of the Course			6.00

(Textbook references overlapping:)
1. Introduction to Electric Circuits, 5th Edition,
T. Floyd, Prentice-Hall, 2003
4. Engineering Circuit Analysis, 6th Edition, McGraw-Hill, 2002
5. Elektrik Devreleri, 3. Baskıdan Çeviri Outlines, Nobel Yayın Dağıtım, 1999

TERM LEARNING ACTIVITIES	NUMBE	WEIGHT
Midterm Exam	1	40.00
Home work-project	0	0.00
Total	2	100.00

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	

| 24 | ECTS / WORK LOAD TABLE |

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications				
Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High