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:	7.00
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:	Doç. Dr. Neyir ÖZCAN SEMERCİ
16	Contact information of the Course Coordinator:	E-posta:fertas@uludag.edu.tr Tel: (224) 294 2017 Adres: Elektrik-Elektronik Mühendisliği Bölümü, 5.Kat, No:524
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:	To help students gain ability of modelling, analysing, and solving in application to electriccal circuits.
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, Ohm and Kirchoff's Laws Using Phasors	
3	Node Voltage and Mesh Current Methods Using Phasors	
4	Source Transform, Thevenin and Norton Theorems Using Phasors	
5	Superposition Using Phasors, Phasor Diagrams	
6	AC Steady-State Power	
7	Max Power Transfer Theorem	
8	Frequency Response of Circuits	
9	Resonances Circuits	
10	Filter Circuits	
11	Circuit Analysis in s-domain	
12	Transfer Function, Step and Impulse Response	
13	Two-port networks, Z and Y parameters, 2-port interconnections	
14	Mutual inductance, coefficient of coupling, stored energy, the dot convention	

| 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	4.00	56.00
Homeworks	10	3.00	30.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	40.00	40.00
Others	0	0.00	0.00
Final Exams	1	42.00	42.00
Total Work Load			250.00
Total work load/ 30 hr			7.00
ECTS Credit of the Course			7.00

3. Engineering Circuit Analysis, 8th Edition, W.H. Hayt, Jr., J.E. Kemmerly & S. M. Durbin,

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work project	3	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to		40.00

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	Measurement and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.

| 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

Contrib ution Level:	1 very low	2 low	3 Medium	4 High	5 Very High