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:	Yrd. Doç. Dr. Neyir ÖZCAN SEMERCİ	
16	Contact information of the Course Coordinator:	E-posta:fertas@uludag.edu.tr Tel: (224) 294 2017 Adres: Otomotiv Mühendisliği Bölümü Zemin Kat, No:108	
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, Ohm and Kirchoff's Laws with Phasors	
3	Node Voltage and Mesh Current Methods with Phasors	
4	Superposition, Source Transform, Thevenin and Norton Theorems	
5	Max Power Theorem	
6	AC Steady-State Power	
7	Frequency Response and Resonances Circuits	
8	Midterm Exam + Review of Past Lecturers	
9	Filter Circuits	
10	Circuit Analysis in s-domain	
11	Transfer Function, Step and Impulse Response	
12	Two-port networks, Z and Y parameters, 2-port interconnections	
13	Mutual inductance, coefficient of coupling, stored energy, the dot convention, Mutual inductance	
14	Review	

J. W. Nilsson & S. A. Riedel, Prentice-Hall, 2001
3. Engineering Circuit Analysis, 6th Edition, McGraw-Hill, 2002

23	Assesment	
TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exams	1	40.00
Home work-project	0	0.00
Total	2	100.00

Success Grade	
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**

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 Exam	1	26.00	26.00
Others	0	0.00	0.00
Final Exams	1	26.00	26.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			7.00

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**