CIRCUIT THEORY I

1	Course Title:	CIRCUIT THEORY I	
2	Course Code:	EEM2101	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	3	
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 the basic concepts of DC circuit behavior, develop and solve mathematical representations for simple RLC circuits, understand the use of circuit analysis theorems and methods.	
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	General circuit element, charge, current; Voltage, sources, power; Resistance, Ohm's Law	
2	Kirchhoff's Laws, single loop/node circuits; R combinations, V & I division; Dependent sources	
3	Nodal analysis	
4	Mesh analysis	
5	Superposition; Source transformations	
6	Thevenin's & Norton's and Maximum power transfer Theorems;	
7	Circuits with ideal operational amplifiers	
8	Review of Past Lecturers + Midterm Exam	
9	Energy Storage Elements, Initial conditions of Switched Circuits	
10	The Complete Responde of RL and RC Circuits	
11	Intro 2nd order circuits: LC undamped case; Source free case: real characteristic roots; Source free case: complex roots	
12	Review	
13	Materials preperation	
14	Review	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preparation	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			210.00
Total work load/ 30 hr			7.00
ECTS Credit of the Course			7.00

23 Assessment

TERM LEARNING ACTIVITIES	NUMBE	WEIGHT
Midterm Exam	1	40.00
Home work-project	0	0.00
Final Exam	1	60.00
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**				