AC CIRCUIT ANALYSIS

1	Course Title:	AC CIRCUIT ANALYSIS
2	Course Code:	EMEZ102
3	Type of Course:	Compulsory
4	Level of Course:	Short Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	1
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr.Gör. ERCAN YAVUZ
15	Course Lecturers:	Öğr.Gör. Ercan Yavuz
16	Contact information of the Course Coordinator:	ismetguc@uludag.edu.tr, 02242942349, U.Ü. TBMYO Mekatronik Prg. Bşk. Görükle Bursa
17	Website:	
18	Objective of the Course:	n this course, aimed to gain knowledge and skills for to set up AC circuits, to use solution methods of AC circuit, to calculate power and energy in AC circuits.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Being able to use of electric circuit elements in AC circuits
	2	Being able to calculate of total reactance in AC circuits
	3	Being able to calculate of current that is flowing in AC circuits.
	4	Being able to calculate of node voltages in AC circuits.
	5	Being able to calculate of powers that is consuming in AC circuits
	6	Being able to do connection of three phase circuits
	7	Being able to use of filters in AC circuits
	8	Being able to use of rectifier circuits in AC circuits
	9	
	10	

21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Definition of AC	Introduction of laboratory
2	Definition of reactance, amplitude and phase angle	Reactance measurement
3	Calculation methods of reactance	Reactance measurements in different frequencies
4	Method of mesh currents	Measurement of circulating current in multi-mesh circuits

5	Method of mesh currents Method of node-voltages	Measurement of node-voltages in multi-mesh circuits
6	Norton-equivalents of AC circuits	Measurement of current value of Norton-equivalent in multi-mesh circuits
7	Thevenin-equivalents of AC circuits	Measurement of voltage value of Thevenin -equivalent in multi-mesh circuits
8	Repeating courses, first midterm	Measurement of voltage value of Thevenin -equivalent in multi-mesh circuits
9	Power in single phase circuits	Measurement of power in single phase circuits
10	Rectifier circuits	Setting up circuits with thyristors and triacs
11	Filters	Setting up filter circuits and investigation of input output signals
12	Three phase circuits	Delta - Y connection circuit and measurement of currents and voltages
13	Repeating courses, second midterm	Delta - Y connection circuit and measurement of currents and voltages
14	Power in three phase circuits	Power measurement with wattmeter

22	Textbooks, References and/or Other Materials:	Course Notes
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	2	50.00
Final Exam	1	50.00
Total	3	100.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	2.00	28.00
Homeworks	14	3.00	42.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	2	8.00	16.00
Others	0	0.00	0.00
Final Exams	1	8.00	8.00
Total Work Load			150.00
Total work load/ 30 hr			5.00
ECTS Credit of the Course			5.00

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	3	0	1	2	4	5	4	3	0	5	4	0	0	0	0	0
ÖK2	0	0	2	2	4	5	4	3	0	4	5	0	0	0	0	0
ÖK3	1	0	1	4	5	5	2	3	2	5	4	0	0	0	0	0
ÖK4	0	1	1	2	3	5	3	2	1	4	5	0	0	0	0	0

ÖK5	0	0	0	1	5	5	3	3	2	4	2	0	0	0	0	0
ÖK6	1	1	0	3	5	5	4	3	3	4	4	0	0	0	0	0
ÖK7	1	1	2	2	4	5	4	2	3	5	5	0	0	0	0	0
ÖK8	1	2	1	2	5	5	5	5	4	5	5	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**