ELECTRO MECHANICAL CONTROL CIRCUITS

1	Course Title:	ELECTRO MECHANICAL CONTROL CIRCUITS	
2	Course Code:	İSOZ201	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	No	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Öğr.Gör. KENAN SAKA	
15	Course Lecturers:	Yrd. Doç. Dr. Salih COŞKUN, Öğr. Gör. Dr. Nurettin YAMANKARADENİZ	
16	Contact information of the Course Coordinator:	Öğr. Gör. Kenan SAKA, Yenişehir İbrahim Orhan MYO İklimlendirme ve Soğutma Teknolojileri Programı YENİŞEHİR/BURSA Tel: 0224 773 60 42, kenansaka@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	In this course the purpose is having proficiency to design of electrical control circuits of HVAC systems to students.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To understand the general trend of refrigerator control circuits
		2	To understand the operating prencible of refrigerator control circuits
		3	To design domestic refrigerator control circuits
		4	To design commercial refrigerator control circuits
		5	To design industrial refrigerator control circuits
		6	To design centrial HVAC control circuits
		7	To design individual HVAC control circuits
		8	To design mobile refrigerator and HVAC control circuits
		9	
		10	
21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	

1	Joints of electrical circuits components 1. Condenser fan joints 2. Thermostat joints 3. Defrost joints 4. Compresör starting joints Control circuit of single door refrigerator 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
2	Control circuits of double door refrigerator 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits Control circuit of no frost refrigerator 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
3	Control circuit of water dispenser 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits Control circuit of sof drink dispenser 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuit	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
4	circuits 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To control circuits of control To operate control circuit
5	Control circuits of chiller 2. Operating prencible of electrical control circuits Control circuits of freezer 1. Vapor compressive cooling cycle circuits	To use electrical measuring devices To joint cable To control circuits of control
6	1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use hand tools To joint cable To control circuits of control To operate control circuit
7	Control circuits of package type air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
8	Repeating courses and midterm exam	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	13	2.00	26.00
Practicals/Labs	13	2.00	26.00
Self study and preperation	12	2.00	24.00
Homeworks	6	2.00	12.00
Projects	1	15.00	15.00
Field Studies	0	0.00	0.00
Midterm exams	1	6.00	6.00
Others	1	1.00	1.00
Final Exams	1	10.00	10.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			3.00

9	Control circuits of roof type air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
10	Control circuits of centrial HVAC systems 1. Centrial components 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
11	Control circuits of car air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
12	Control circuits of minibus air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
13	Control circuits of bus air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit
14	Control circuit of refrigeratied vehicle air conditioner 1. Vapor compressive cooling cycle 2. Operating prencible of electrical control circuits	To use electrical measuring devices To use hand tools To joint cable To control circuits of control To operate control circuit

22	Textbooks, References and/or Other Materials:	[1] Türkmen Y., Geçtan C.,(1998). Kumanda Devreleri 1., Birsen Yayınevi, İstanbul. [2] Türkmen Y., Geçtan C.,(1998). Kumanda Devreleri 2., Birsen Yayınevi, İstanbul.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	0	0.00
Home work-project	7	20.00
Final Exam	1	50.00
Total	9	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	0	0	0	0	0	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							