

Number of units 6	T 4	Pr 2	Th 2	Number of weekly hours	Annual System 30 weeks	Al-Esra'a University College Department: Engineering of Refrigeration and Air Conditioning Technologies
Theoretical and practical subjects				Electrical technology		First stage
<u>Course Objective</u>						
Teaching the student, the basic principles of electrical technology and applications.						

Week	Topics	Practical Subjects	Notes
1-2	Resistance, conductance, effect of temp. on the resistance value	Using multimeter to measure Voltage, Current and Resistance	
3-4	Ohms law, series connection, parallel connections, compound connection	Ohms law	
5-6	Voltage and current divider solved examples	Voltage and Current divider rule .	
7-8	Kirchhoff voltage and current law .	Kirchhoffs voltage law	
9-10	Star-delta, voltage and current source conversion	kirchhoffs current law	
11-12	Thevenins theorem, maximum power transfer	Thevenins theorem	
13	Norton theorem	Norton theorem	
14	Nodal method		
15	Maxwells loop current method, superposition	Superposition theorem	
Half-year Break			
16	Electromagnetic circuits		
17	Alternating voltage and current		
18	Frequency , period , instantaneous value of voltage and current .		
19	Series A.C circuit, R,L,C		
20	Impedance, phase angle, resonance, phasor diagram	Series A.C circuit	
21	Parallel A.C circuit, R,L,C		
22	Addmittance, power factor, phasor diagram	Parallel A.C circuit	
24	3-phase circuit, star and delta connection		
25	Active, reactive, apparent power in A.C circuit		

26	Transformer		
27-28	Voltage rectification, half wave rectifier	Open and short circuit transformer tests .	
29-30	Voltage rectification, full-wave rectifier	Half-wave rectifier	