

Number of units 7	T 5	Pr 3	Th 2	Number of weekly hours	Annual System 30 weeks	Al-Esra'a University College Department: Engineering of Refrigeration and Air Conditioning Technologies
				Mechanical Design		Third stage
<u>Course Objective</u>						
Teaching the students, basic principles to design different machine parts and teach them varying loads and thermal stresses to design complete part for different mechanisms						

Week	Topic	Lab. Experiment Assignments	Notes
1-2	Materials and simple stresses		
3-4	Variable stresses and stress concentration		
5-6-7	Screws, rivets and weld joints		
8-9	Initial stress in screwed fastening		
10-11	Power screw design		
12-13-14	Shaft design		
15	Key and coupling		

Half-year Break			
16	Cotter joint		
17	Knuckle joint		
18	Clutches and brakes		
19-20	Bearings design		
21-22	Design of sliding bearing		
23-24	springs		
25-26	Pressure vessels and pipes		
27-28	Static and dynamic leakage		
29-30	Gears design, Thermal stresses		

Practical Part:

<i>Week</i>	<i>Topic</i>
1-30	Design-CAD and Specified Design Software