

INDU 421: Facilities Design and Material Handling Systems

Assignment 5

- 1- A manufacturing facility produces 10 components. Components 1,2,6,8 and 9 are of equivalent size and weight. Components 3, 7 and 10 are five times bigger and heavier than components 1,2,6,8 and 9, whereas components 4 and 5 are just half size of components 1,2,6,8 and 9. Facility includes departments A, B, C, D, E and F and the overall flow path is A-B-C-D-E-F. The quantities to be produced and the routing for each component are given below. Develop a From-To Chart for this facility while taking the factor of ease of handling into consideration.

Component	Production quantity	Routing
1	15	A-B-C-D-E-F
2	35	B-D-E-C-F
3	2	A-C-D-B-C-E
4	42	A-C-D-E-F
5	50	B-C-A-D-F
6	17	A-C-D-B-C-E
7	4	C-B-A-D-E-F
8	27	B-D-E
9	25	A-B-C-E-F
10	5	D-B-C-E-F

- 2- A manufacturing plan has 8 departments and 2 storages. Below is given a From-To Chart reflecting the material flows taking place in the plant.

	D1	D2	D3	D4	D5	D6	D7	D8	S1	S2
D1		10	27	24	254	1				
D2			1	1		27				
D3	1	3		5	112	19		82		
D4	3				8	45	1	78		
D5	1		3	114		121	3			
D6				1	1			124		
D7					3	2				
D8			46	47		7			263	60
S1										
S2	257							59		

- a) Develop a Relationship Chart using qualitative closeness relationship values.
 b) Transform your Relationship Chart to Relationship Diagram.