

Assignment – time constraint

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a. (25 marks) A Client notifies the contractor that the project needs to be finished within 8 weeks and asks for any additional cost to be announced by the contractor. With the activity crashing information as in below, what will be new total cost of the project?

WBS	Work packages	Predecessor	Normal duration (w)	Normal cost (MT)	Crash 1 duration (w)	Crash 1 cost (MT)
1	Window installation		3	3	1	5
2	Plumbing		5	7	2	11
3	Wall plastering	1	5	5	1	8
4	Floor isolation	2	3	4	1	5
5	Floor finishing	2,3	3	5	2	7
6	Door installation	4	2	6	1	7
7	Painting	3	3	4	1	7

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b. (25 marks) The contractor has also fast tracking option with the following information:

WBS	Predecessor	Normal duration (w)	Normal cost (MT)	Chance of rework (% per week of fast tracking)	Rework cost (TT/%)
1		3	3		
2		5	7	10	60
3	1	5	5		
4	2	3	4	15	70
5	2,3	3	5	15	75
6	4	2	6	30	30
7	3	3	4	20	90

Calculate additional cost of the project with using fast tracking for compressing the project to 8 weeks duration! Which method is more beneficial?

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c. (25 marks) Contractor was thinking to use a combined method of crashing and fast tracking to reduce to total additional cost for bringing total duration within 8 weeks! Can he find a combined method of project compressing to reduce the total additional cost? If yes, what will be the final additional cost!

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-  d. (25 marks) Information of interior construction activities for a 5 story building is given in table below. Use LOB diagram for synchronizing crews and more accurately calculating activity durations!

WBS	Predecessor	Estimated Total Duration (w)	Crew Duration per unit (w.L/Unit)	Weekly cost of crew (KT)
1		3	1	1000
2		5	2.5	1500
3	1	5	3	700
4	2	3	2	400
5	2,3	3	2	900
6	4	2	4	800
7	3	3	1	300

Due date one week