




















4 Coordinate Worksheets

Chapter 4 consists of twenty-one exercises: 2 Roundtable, 6 Class, 12 Team, 1 Simulation

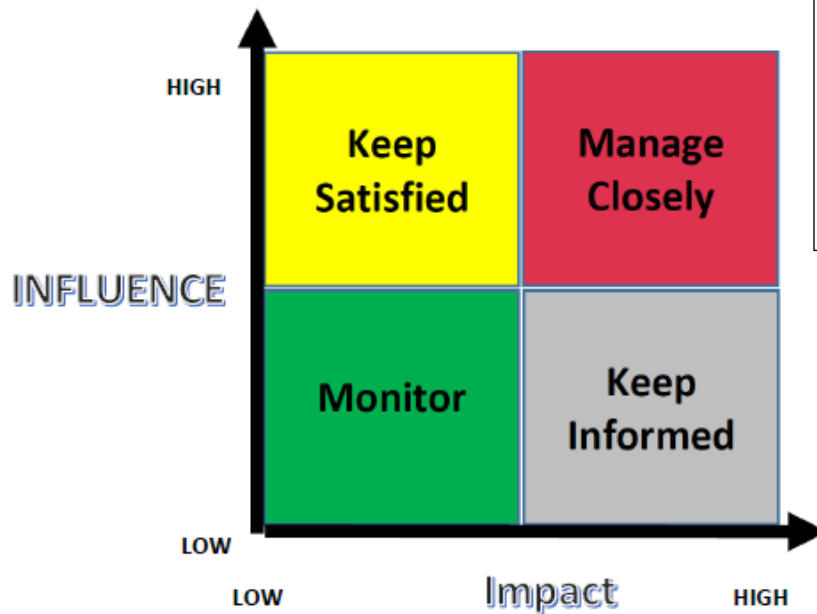
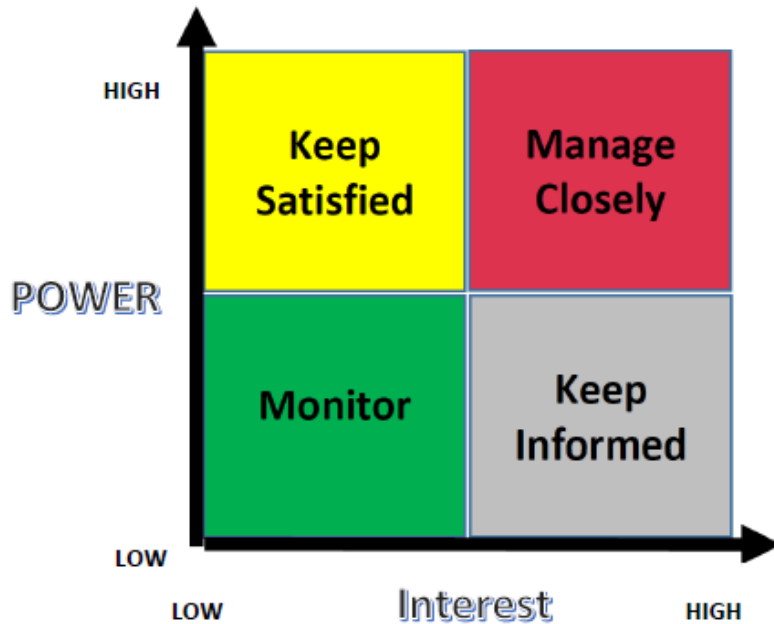
<u>TYPE</u>	<u>EXERCISE WORKSHEET</u>	<u>PAGE</u>
	4.1.1 Stakeholder Classification	49
	4.1.2 Stakeholder Engagement Assessment	50
	4.1.3 Action Planning	51
	4.2.1 Create Wagon WBS	52
	4.2.2 Kitchen Replacement WBS	53
	4.3.1 Network Diagramming	54
	4.3.2 PDM Networks	55
	4.3.3 Kitchen Replacement Network	56
	4.4.1 Duration Estimates	57
	4.4.2 Estimating Techniques	58
	4.4.3 Kitchen Replacement Timing	59
	4.4.4 Milestones	61
	4.5.1 Resource Smoothing/Leveling	62
	4.5.2 Kitchen Replacement Leveling	63
	4.6.1 Estimating Accuracy	64

<u>TYPE</u>	<u>EXERCISE WORKSHEET</u>	<u>PAGE</u>
	4.6.2 Kitchen Replacement Budget	65
	4.7.1 Team Assignments	67
	4.7.2 Staff Selection	68
	4.8.1 Team Formation	69
	4.8.2 Team Development Stages	70
	4.8.3 Effective Team Characteristics	71



4.1.1 Stakeholder Classification Worksheet

Place the individuals assigned to your team in one quadrant of the Power/Interest grid and the Influence/Impact grid. Explain each selection.



Bakersfield Project			
	Name	Co.	ID
Team 1	H. Morris	GMI	A
	D. Mills	GMI	B
	C. Helmet	HTMI	C
	T. Wadsworth	BCI	D
	C. Atlas	BCI	E
Team 2	V. Clark	GMI	F
	J. Willy	GMI	G
	C. Englehof	HTMI	H
	A. Wennberg	HTMI	I
	Architech	BCI	J
Team 3	A. Rost	GMI	K
	P. Smith	GMI	L
	J. Muller	HTMI	M
	K. Jansen	HTMI	N
	A. Dodd	BCI	O



4.1.2 Stakeholder Engagement Assessment Worksheet

Stakeholder Engagement Assessment Matrix							
#	Stakeholder/Company	Unaware	Aware				Engagement Gap R-Y-G
			Resistant	Neutral	Supportive	Leading	
1	Harvey Morris/GMI				C		
2	Victor Clark/GMI				C		
3	John Willy/GMI		C				
4	Diane Mills/GMI			C			
5	Tom Wadsworth/BCI					C	
6	Carol Atlas/BCI			C			
7	Curt Helmut/HTMI	C					
8	James Muller/HTMI		C				



4.1.3 Action Planning Issues Log Worksheet

Stakeholder Engagement Action Planning						
Team	#	Issue	Owner	Action	Date	Status
Team 1	1	Information needed for permits?				
	2	Liability during construction?				
	3	On time delivery appliances & cabinets?				
Team 2	4	What work must be contracted?				
	5	Will design double countertop area?				
	6	Containing construction dirt/dust?				
Team 3	7	Can all work be completed in 4 weeks?				
	8	Will tear out expose problems?				
	9	Is general contractor needed?				



4.2.1 Create Wagon WBS Worksheet

Wagon WBS							
Level 1							
Level 2							
Level 3							



4.2.2 Kitchen Replacement WBS Worksheet

■ Team 1 - Project Phase _____

■ Team 2 - Project Phase _____

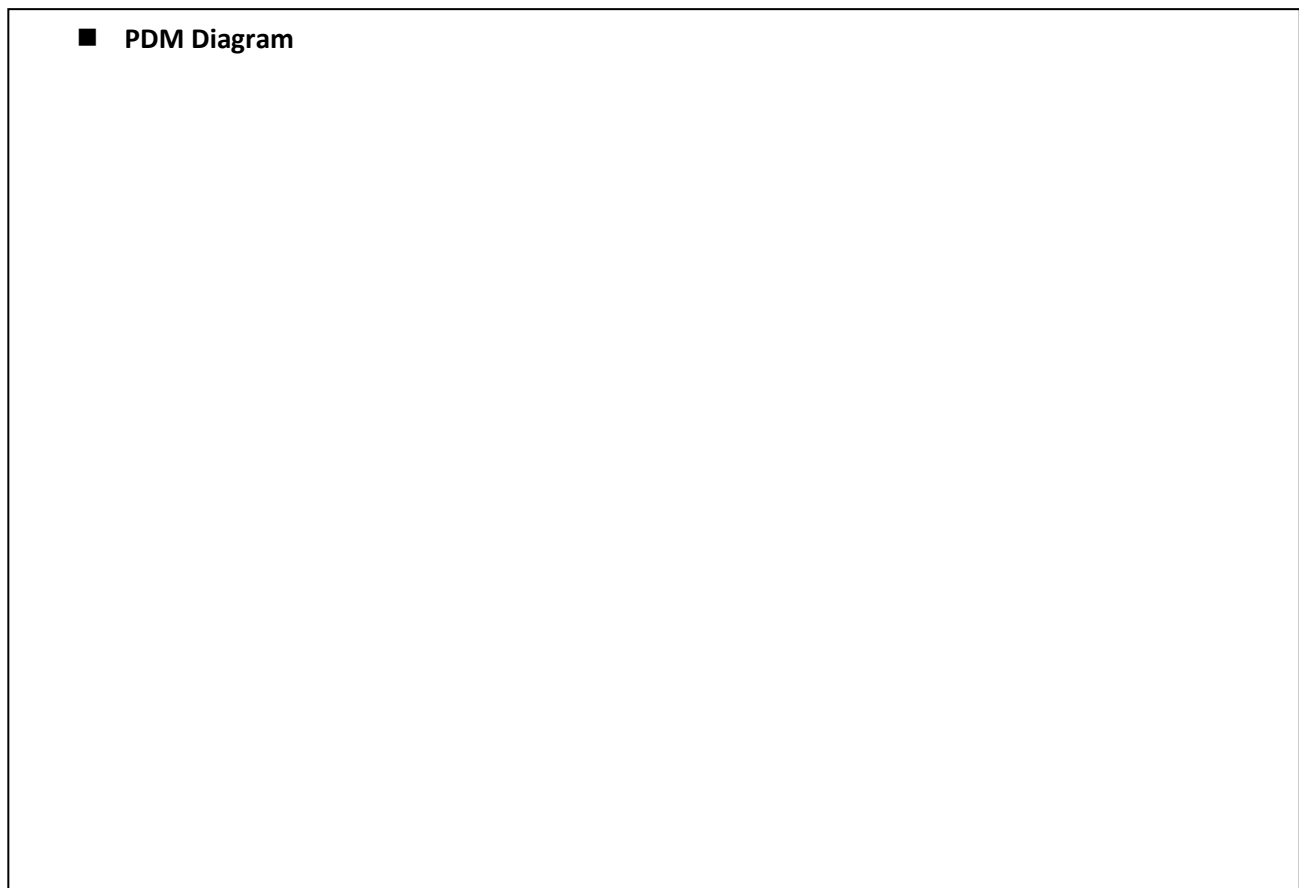
■ Team 3 - Project Phase _____



4.3.1 Network Diagramming Worksheet

Instructions: Use the information in the table to create an AON diagram. On site class displays this sheet on a surface that can be easily erased. On line class uses the electronic white board with tools allowing creation of boxes and arrows

Activity	A	B	C	D	E	F	G
Predecessors	-	-	-A, B	B	A	C, D	E, F





4.3.2 PDM Network Worksheet

■ Team 1 - PDM Network Problem 1

Activity	A	B	C	D	E	F	G	H	I
Predecessors	-	-	A	A	B	B	D, E	C	F, G, H

■ Team 2 - PDM Network Problem 2

Activity	A	B	C	D	E	F	G	H	I
Predecessors	-	A	A	A	B	B	B	C, D	E, F, G, H

■ Team 3 - PDM Network Problem 3

Activity	A	B	C	D	E	F	G	H	I
Predecessors	-	-	-	A, B	B, C	D, E	E	A	H



4.3.3 Kitchen Replacement Network Worksheet

■ **Team 1 - Design/Procure Phase Network Diagram**

{Paste picture of white board diagram here if working in a classroom}

■ **Team 2 - Tear Out/Prep Phase Network Diagram**

{Paste picture of white board diagram here if working in a classroom}

■ **Team 3 - Install Phase Network Diagram**

{Paste picture of white board diagram here if working in a classroom}



4.4.1 Duration Estimates Worksheet

- When you asked, how long will it take to do a task? How do you arrive at your answer?

- Do you ever add in extra time? Why?

- What are the consequences of being under or over your estimate?



4.4.2 Estimating Techniques Worksheet

■ **Team 1 – Topic 4.4 Duration and Milestones Practice Problem 1**

List any assumptions you make regarding this problem and show all calculations

■ **Team 2 – Topic 4.4 Duration and Milestones Practice Problem 2**

List any assumptions you make regarding this problem and show all calculations

■ **Team 3 – Topic 4.4 Duration and Milestones Practice Problem 3**

List any assumptions you make regarding this problem and show all calculations



4.4.3 Kitchen Replacement Timing Worksheets

KRP Network Paths Table						
Path	Team 1		Team 2		Team 3	
	Description	Time(Days)	Description	Time(Days)	Description	Time(Days)
A						
B						
C						
D						
E						
F						
G						
H						
I						

Bar Chart Timing Worksheets

Team 1

Design Procure Phase Bar Chart																																							
ID	Task Name	Pred.	Dur. Days	Res. Init.	Working Days																																		
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
2	Design Concept		5 days																																				
3	Order Appliances		5 days																																				
4	Design Layout		1 day																																				
5	Order Tile, Sink, Disposal		2 days																																				
6	Ord. Cupbds. & Ctrtop		1 day																																				
7	Design Electrical		2 days																																				
8	Order Elect. Fixtures		2 days																																				
9	Contract Cupbd. Install		3 days																																				
10	Contract Tile Install		3 days																																				
11	Contract Carp, Elec, Plumb		5 days																																				
12	Secure Permits		8 days																																				
13	Delv. Matls. Ordered		24 days																																				

Team 2

Tear Out and Prep Phase Bar Chart																				
ID	Task Name	Pred.	Duration	Res. Initials	Working Days															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	Disc & remove Burners		2 days																	
4	Disc & Remove sink /faucets		1 day																	
5	Disc & remove oven		1 day																	
6	Remove countertop	3,4	1 day																	
7	Remove lwr Cabinets		2 days	6																
8	Remove Upper Cabinets		1 day	5																
9	Remove soffit		1 day	8																
10	Remove drywall behind cupbds.	7,9	1 day																	
11	Remove floor tile	7,9	1 day																	
12	Rough In Elec		2 days	10																
13	Rough In Plumbing		1 day	10																
14	Install new Drywall	11,12,13	1 day																	
15	Paint		1 day	14																

Team 3

Install Phase Bar Chart																				
ID	Task Name	Pred.	Duration	Res. Initial	Working Days															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14		
4	Finish Electrical Outlets		1 day																	
5	Install Upper Cabinets	4	2 days																	
6	Install Lower Cabinets	4	1 day																	
7	Install Conutertop	6	1 day																	
8	Install Sink w/disposal	7	1 day																	
9	Install Dishwasher	7	2 days																	
10	Install Ceiling Light w/fan	5	1 day																	
11	Install Microwave	5	2 days																	
12	Install new Floor Tile	8,9	1 day																	
13	Install Stove	12	1 day																	
14	Finish Trim	12	2 days																	
15	Paint Trim & Touch Up	10,11,13,14	1 day																	

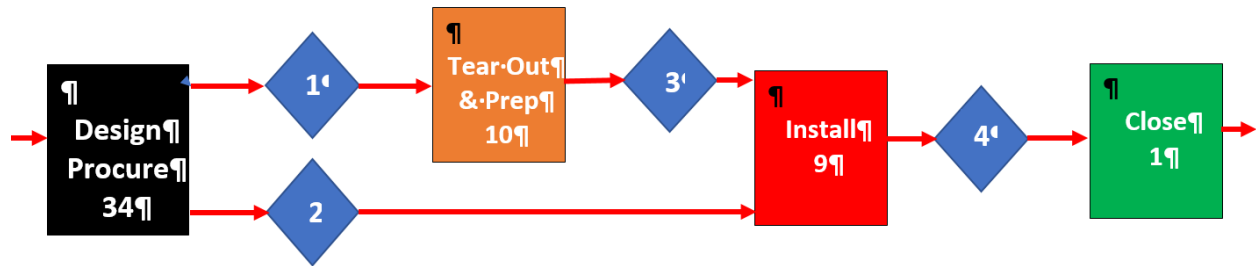
KRP Timing Solutions Table	
Phase/Milestone Event	Days to Complete
Permits Complete	
Material Delivery Complete	
Design /Procure	
Tear Out & Prep	
Install	
Close	



4.4.4 Milestones Worksheet

Milestone Worksheet 

1. Permits complete -- Predecessor to Tear-Out & Prep: Disconnect and remove countertop burners, oven, sink, and faucet. (DAY ____)
2. Material Delivery Complete -- Predecessor to Install: Finish Electrical Outlets. (DAY ____)
3. Paint Prep Complete -- Predecessor to Install: Finish Electrical Outlets. (DAY ____)
4. Paint Trim & Touch-Up Complete -- Predecessor to Close Phase. (DAY ____)





4.5.1 Resource Smoothing/Leveling Worksheet

Resource Smoothing

Task	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6
A	2	2	2			
B			3	3	3	
C				4	4	4
D		1	1	1		
E		1	1	1	1	1
Total	2	4	7	9	8	5
Smooth						
Task	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6
A						
B						
C						
D						
E						
Total						

Resource Leveling @ 4 Workers

Task	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9
A	2	2	2						
B			3	3	3				
C				4	4	4			
D		1	1	1					
E		1	1	1	1	1			
Total	2	4	7	9	8	5			
Level @ 4 Workers									
Task	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9
A									
B									
C									
D									
E									
Total									



4.5.2 Kitchen Project Leveling Worksheet

KRP Leveling Solution Table				
Status	Parameter	Design & Procure	Tear Out & Prep	Install
Original Plan	Overallocated Resources			
	Overallocated Occurances			
	Days to Complete			
After Smoothing	Overallocated Resources			
	Overallocated Occurances			
	Days to Complete			
After Leveling	Overallocated Resources			
	Overallocated Occurances			
	Days to Complete			



4.6.1 Estimating Accuracy Worksheet

Estimate Accuracy Corrective Actions			
Team	Item	Bad Estimate Root Cause	Corrective Action
Team 1	1	Missing scope items	
	2	Wrong equipment	
	3	Improper estimating method	
Team 2	4	Poorly defined WBS	
	5	No allowance for inflation	
	6	Wrong materials/quantity	
Team 3	7	Inadequate risk allowances	
	8	Too Optimistic	
	9	Wrong human skills/quantity	



4.6.2 Kitchen Replacement Budget Worksheets

Team 1 - Design Procure Phase Budget								
ID	Task Name	Dur. Days	Res. Init.	Rate/hr	Rate/day	Variable	Fixed	Total
1	Design Concept	5 days	PM					
2	Order Appliances	5 days	SP					
3	Design Layout	1 day	DE					
4	Order Tile, Sink, Disposal	2 days	SP					
5	Ord. Cupbds. & Ctrtop	1 day	SP					
6	Design Electrical	2 days	DE					
7	Order Elect. Fixtures	2 days	SP					
8	Contract Cupbd. Install	3 days	PM					
9	Contract Tile Install	3 days	PM					
10	Contract Carp, Elec, Plumb	5 days	PM					
11	Secure Permits	8 days	PM					
12	Delv. Matls. Ordered	24 days	LO					
Design Procure Phase Budget Totals								

Team 2 - Tear Out and Prep Phase Budget								
ID	Task Name	Duration	Res. Initials	Rate/hr	Rate/day	Variable	Fixed	Total
1	Disc & remove Burners	2 days	EL					
2	Disc & Remove sink /faucets	1 day	PB					
3	Disc & remove oven	1 day	EL					
4	Remove countertop	1 day	CP					
5	Remove lwr Cabinets	2 days	CP					
6	Remove Upper Cabinets	1 day	CP					
7	Remove soffit	1 day	CP					
8	Remove drywall behind cupbds.	1 day	CP					
9	Remove floor tile	1 day	CP					
10	Rough In Elec	2 days	EL					
11	Rough In Plumbing	1 day	PB					
12	Install new Drywall	1 day	CP					
13	Paint	1 day	PM					
Tear Out and Prep Phase Budget Totals								

Team 3 - Install Phase Budget								
ID	Task Name	Duration	Res. Initials	Rate/hr	Rate/day	Variable	Fixed	Total
1	Finish Electrical Outlets	1 day	EL					
2	Install Upper Cabinets	2 days	CI					
3	Install Lower Cabinets	1 day	CI					
4	Install Conutertop	1 day	CI					
5	Install Sink w/disposal	1 day	PB					
6	Install Dishwasher	2 days	PB					
7	Install Ceiling Light w/fan	1 day	EL					
8	Install Microwave	2 days	EL					
9	Install new Floor Tile	1 day	TI					
10	Install Stove	1 day	EL					
11	Finish Trim	2 days	CP					
12	Paint Trim & Touch Up	1 day	PM					
Install Phase Budget Totals								

Budget Solution Table

Project Phase	Variable Cost	Fixed Cost	Total Cost
Design/Procure			
Tear Out/ Prep			
Install			
Close			
Total Project			



4.7.1 Team Assignments Worksheet

Company	Project Team Participants	
	Leadership Team - Team 1	Engineering Team - Team 2
GMI		
HTMI		
BCI		
Contract		
Company	Project Team Participants	
	Construction Team - Team 3	Plant Start Up Team - Team 3
GMI		
HTMI		
BCI		
Contract		



4.7.2 Staff Selection Criteria Worksheet

Team 1 - Project Engineer		
Selection Criteria	Weight	Logic

Team 2 - Project Scheduler		
Selection Criteria	Weight	Logic

Team 3 - Financial Analyst		
Selection Criteria	Weight	Logic



4.8.1 Team Formation Worksheet – Team ____

■ Agenda for _____ Team Formation Meeting

■ Deliverables from _____ Team Formation Meeting



4.8.2 Team Development Stages Worksheet

- What is the stage of team development after the team formation event in the previous exercise?

- In your experiences with teams did you see these stages and can you give some examples?

- How long did each stage take and did they repeat?



4.8.3 Effective Team Characteristics Worksheet

■ **Barriers to Effective Teams**

■ **Ideas to Mitigate Barriers**

