Remodeling Chemical Lab: AOA CPM Example using array formulas in EXCEL

Photios G. Ioannou **Sept 12, 2022**

(See below and to the right of this table for explanatory notes about the formulas used)

CPM Table for Activity-on-Arrow Network with correct FF and INDF formulas

I	J	Activity Description	T	ESD	EFD	LSD	LFD	TF	FF	INTF	INDF	Crit	Auxiliary columns ESDforFF	LFDforINDF
02	04	Strip room	3	0	3	1	4	1	0	1	0		0	4
02	12	Obtain fume hood	10	0	10	4	14	4	2	2	2		0	14
02	14	Obtain cabinets	10	0	10	3	13	3	2	1	2		0	13
02	20	Obtain chemical sink	10	0	10	7	17	7	4	3	4		0	17
02	24	Painter availability	20	0	20	0	20	0	0	0	0	C	0	20
02	28	Obtain vinyl floor covering	5	0	5	21	26	21	21	0	21		0	26
04	06	Rough-in plumbing and electrical	5	3	8	4	9	1	0	1	0		3	9
04	08	Replace existing fume duct	3	3	6	6	9	3	2	1	1		3	9
06	08	Dummy	0	8	8	9	9	1	0	1	0		8	9
06	10	Repair floor	1	8	9	12	13	4	3	1	2		8	13
08	10	Repair walls and ceiling	4	8	12	9	13	1	0	1	0		8	13
10	12	Dummy	0	12	12	14	14	2	0	2	0		12	13
10	14	Dummy	0	12	12	13	13	1	0	1	0		12	13
12	16	Install new fume hood	1	12	13	14	15	2	0	2	0		12	15
14	16	Dummy	0	12	12	15	15	3	1	2	0		13	13
14	22	Install wall cabinets	5	12	17	13	18	1	0	1	0		12	18
16	18	Install 1/3 base cabinets	1	13	14	15	16	2	0	2	0		13	16
18	20	Dummy	0	14	14	17	17	3	0	3	0		14	16
18	22	Install 2/3 base cabinets	2	14	16	16	18	2	1	1	0		14	18
20	22	Install chemical sink	1	14	15	17	18	3	2	1	0		14	18
22	24	Finish plumbing and electrical	2	17	19	18	20	1	1	0	0		17	20
24	26	Dummy	0	20	20	23	23	3	0	3	0		20	20
24	28	Paint cabinets	6	20	26	20	26	0	0	0	0	C	20	26
26	28	Paint walls and ceiling	3	20	23	23	26	3	3	0	3		20	26
28	30	Lay vinyl floor	1	26	27	26	27	0	0	0	0	C	26	27

Correct formulas for FF and INDF, when all succ. or pred. are dummies, require the auxiliary columns ESDforFF and LFDforINDF.

This model shows the correct INDF(26,28) = 3.

Project Duration = 27