
	FINAL TEST DEPARTMENT OF STATISTICS FACULTY ITS ODD SEMESTER ACADEMIC YEAR 2014/201	
	Course / Study Program/Class : Work Measurement Techniques/S1/A & B Daya/Date : Friday, 02 January 2015 Sifat / Time : Open Text Book/ 150 menit Lecture : Lucia A and Diaz F.A.	
Page 1 of 2	Criteria no.5 of 15 Criteria AUN-QA , Student Assessments : 5.4 The assessments reflect the Expected Learning Outcomes(ELO) and the content of the programme 5.6 The assessment arrangements cover the objectives of the Curriculum	6-FT

This Final Test measure 4 of 8 ELO, that's are :

ELO	Description	Problem Number
ELO1.1T-2	Able to apply quantitative measurement of the standard time in the real problems	4
ELO1.1T-5	Able analyze a working method.	6
ELO1.1T-6	Able to apply the synthesis time measurement to improve the system work.	6
ELO1.1T-7	Able applying time working in Operations Management	1,2,3,4
ELO1.1T-8	Able applying Statistics in Ergonomics	5

Problem no.1

Installation time ornament glass color at a particular craft industry manufacture decorative lights can be seen in Table 1. Based on these data:

- Make a model of the relationship between time and number of ornaments
- Determine how many days it takes untukmembuat a decorative lighting in city hall if the city government ordered a 1200-type glass for decorative lighting such (assuming in one day is 8 hours).
- If the local government wants decorative lamp is ready to use in the next 2 weeks, what is the number of workers needed to complete a decorative lighting the city government orders?
- What are the costs to be incurred by the city government if the cost of a worker per hour is equal to 15,000, -and the price of each type of glass used is of Rp.2.750, -

Table 1

No	1	2	3	4	5	6	7	8	9	10
Ornament Total	3	2	3	4	5	5	7	7	8	8
Time	5.2	5.4	5.5	6.5	6.4	6	7.4	7.5	7.7	8.4

Problem no.2

An automotive spare parts company install a production target of 250,000 units per year in which the components are produced through 4 stages with the data as listed in Table 2. Calculate the number of machine / operator required the company to each stage of production (assuming there are 250 working days in year).

Table 2

Explanation	Stage			
	T1	T2	T3	T4
Working Time/dayi	1 shift	1 shift	1 shift	1 shift
Machine Time/unit (menit)	15	19	17	21
down time/shift (menit)	25	45	35	40
set up time/shift (menit)	7	19	4	10
Defect	2%	3,5%	4%	1,5%

Problem no.3

If the product component C is made by 3 elements of work as shown in Table 3, as a matter breaks above, while cooperation 1 shift and as already experienced the employee works 10% more than average rata.allowance 80 minutes per day.

- Test keseargaman and adequacy of the data on the degree of accuracy of 10% and a significant level of 5% in the working elements of A?
- Determine the standard output that can help resolve the following case c! If the company provides time working 2 shifts per day if the employee works two shifts? Explain why?
- Suppose a basic wage of employees is Rp.2.300.000 / month. Every month an average of 25 working days. How wages and incentives for employees A if in November 2014 to produce 200 units and employee B can produce 325 units. Determine based methods incensive plan 4 and Halsey n Bedaux plan. Average participation factor of 0.85, Bonus dibrikan if the 0.95 level.
- In general, a method which is better between and Bedoux incentive plan-4?

DoS-ITS mempunyai 10 Dokumen utama dalam proses perkuliahan, yaitu : empat Dokumen : CP, RP, RE, UT & R, tiga buah SOP: PBS,PCS & PK dan tiga Formulir Rekaman : FT, PA,DN & RN DoS-ITS has 10 primary documents in the lecture, ie: four documents: CP, RP, RE, UT & R, three SOP, ie: pbs, PCS & PK and three Recording Form, ie: FT, PA & RN											
1-CP	2-RP	3-RE	4-UT	4A-R	5-PBS	6-FT 7-PCS	8-PA	9-PK 10-RN			
Capaian Pembelajaran Learning Outcome	Rencana Pembelajaran Lesson Plan	Rencana Evaluasi Evaluation Plan	Uraian Tugas Assignment Description	Rubrik Rubric	Prosedur Membuat Soal	Format Tes Script Tests Form	7-Checking Porosedur 8-Assessment Checking	9.Complaint SOP 10. Correction Form			



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Table 3

Work Element (menit)	X1	X2	X3
A	8	10	9
B	7	8	8
C	15	14	12

Problem no.4

PT. Jaya Utama produce a tricycle. To make one of these bicycle components required 16 process as shown in Table 1. The working hours in the company is one shift per day, 1 week 5 working days equivalent to 40 hours of work. if desired production capacity is 100 units per week and the company wants balance minimal delay, specify the grouping of processes and efficiency. Describe the sense of balance across production, balance delay and efficiency Tabel 1

N0	Activity	Time	Predecessor Activity
1	A	5	-
2	B	7	A
3	C	10	A
4	D	7	B
5	E	5	C
6	F	7	D
7	G	5	E
8	H	5	A,E

N0	Activity	Time	Predecessor Activity
9	I	10	F,G
10	J	5	I
11	K	7	H
12	L	5	J
13	M	5	J
14	O	10	M
15	N	15	L
16	P	10	O,N,K

Problem no.5

Devise a plan Anthropometry dining chairs to be used by people who measure the dimensions of the body can be represented by the data as shown in Table 4

Table 4

No	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DHB Code	4	6	8	9	10	11	12	13	14	15	16	19	24	26
Dimensions of Human Body (DHB)	X1	99	66	61	30	24	42	40	58	50	38	33	220	61
	X2	109	65	63	24	22	41	39	53	49	39	36	32	270
	X3	110	64	64	26	21	43	40	57	48	40	38	31	253

Problem no.6

Figure 1 below, is the layout of the workplace to pack 5 pieces of red color markers (M), Yellow (K), blue (B), Green (H) and Orange (O). P is the plastic packing material. F is a marker that has been packed. Maximum Jangkauan operator is 30 cm. Is there a workplace layout better than this. If there is show time more efficiently. Make the assumption that markers pengemasan process easier.

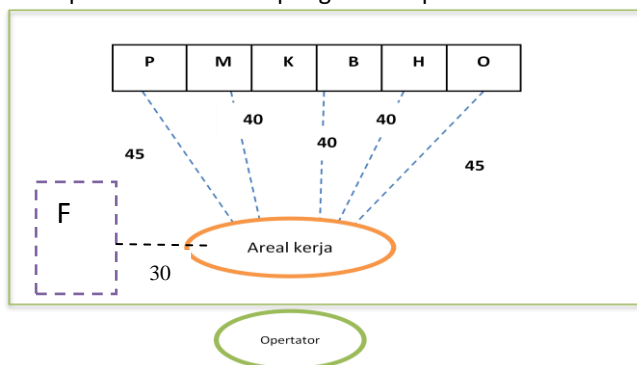


Figure 1. Working Areal Lay Out

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