



PORTFOLIO
Department of Agribusiness
Faculty of Agriculture
University of Islam Malang

Subject	Operation Research
Module Level, if available	Undergraduate Study Program of Agribusiness
Subject Code	MKW60718
Type of course	Elective course
Credits	3 credits/ 5.1 ECTS
Semester	5
Prerequisite	-
Parallel Class	A, B and C
Module Description	This course learns about how to make optimal decisions on the company's operating problems. Through this course, it is expected that students can solve problems related to the company's operations. What is studied in this course includes decision making, completion of company optimization with linear programs, inventory control, transportation methods, forecasting, scheduling and project management, assignment and supply chain management.
Learning Outcomes	<p>The intended learning outcomes are:</p> <ol style="list-style-type: none"> 1. Able to master the concept of operations research and be able to apply it in optimal decision making (CLO 1) 2. Able to solve company operating cases with linear programming both graphical and method (CLO 2) 3. Able to solve simplex and can perform post-optimal test (CLO 3) 4. Able to control material inventory in the company and determine the right transportation method that can minimize costs or maximize contribution (CLO 4) 5. Able to evaluate project planning through sales forecasting and or market demand as well as (CLO 5) 6. Able to evaluate and manage scheduling and manage projects efficiently (CLO 6) 7. Able to manage business with minimum costs/assignments (CLO 7) 8. Able to manage supply chain appropriately (CLO 8)
Learning Content	<ol style="list-style-type: none"> 1. Students are able to study optimal operations and decision-making research based on the nature of resources and environmental conditions. 2. Students are Able to take optimal decisions with linear program calculations 3. Students are able to control the supply of raw materials optimally 4. Students are Able to solve transportation cases at

	<p>minimum cost</p> <ol style="list-style-type: none"> 5. Students are able to forecast the demand or sales of an industrial product 6. Students are able to schedule a project with the right methods 7. Students are able to determine loading or assignment on machines or workers at a minimum cost. 8. Students can evaluate the case of supply chain management of a product
Aims	Have general knowledge of the concepts of crop production, the concepts of efficiency, communication and entrepreneurship to take strategic and operational decisions and be able to formulate problem solving in the field of agribusiness in a sustainable manner
Teaching Methods	Several methods applied in this course consist of lecturing, assignment, practice and group presentation. All these methods are applied on 1 parallel classes
Participant	<ul style="list-style-type: none"> • A class: 38 students from 5st semester • B class: 36 students from 5st semester • C class: 39 students from 5st semester
Teaching Attendance	<p>A total of 14 meetings were held totally (100%) by lecturers (class A,B and C)</p> <ul style="list-style-type: none"> • In class A, students 38 have an attendance rate 100%. • In class B, students 36 have an attendance rate 100%. • In class C, students 39 have an attendance rate 100%.
Evaluation System	The assessment components in this course consist of attendance, structured assignments, practicum, midterm exams and final exams. All these components are then combined to get the final score. Assessment matrix and sample questions are available in Appendix 1 and Appendix 2
Learning Result	<ul style="list-style-type: none"> • Achievement ILO in A Class <ul style="list-style-type: none"> CLO 1 = 64,47 (Excellent) CLO 2 = 70,47 (Excellent) CLO 3 = 51,32 (Excellent) CLO 4 = 61,32 (Excellent) CLO 5 = 50,22 (Excellent) CLO 6 = 51,32 (Excellent) CLO 7 = 55,32 (Excellent) CLO 8 = 52,30 (Excellent) • Achievement ILO in B Class <ul style="list-style-type: none"> CLO 1 = 70,54 (Excellent) CLO 2 = 79,44 (Excellent) CLO 3 = 60,54 (Excellent)

	<p>CLO 4 = 57,60 (Excellent) CLO 5 = 67,80 (Excellent) CLO 6 = 57,63 (Excellent) CLO 7 = 55,32 (Excellent) CLO 8 = 52,30 (Excellent)</p> <ul style="list-style-type: none"> Achievement ILO in C Class <p>CLO 1 = 78.85 (Excellent) CLO 2 = 88.96 (Excellent) CLO 3 = 80.85 (Excellent) CLO 4 = 74.60 (Excellent) CLO 5 = 79.86 (Excellent) CLO 6 = 70.70 (Excellent) CLO 7 = 65.00 (Excellent) CLO 8 = 85.00 (Excellent)</p> <p>Complete achievement on average ILO can be seen on Appendix 3</p>
Statistical Distribution	<ul style="list-style-type: none"> A Class, Grade distribution: A = 13 students, B = 5 students, C= 14 Students, D = 3 Students and E= 3 students B Class, Grade distribution: A = 7 students, B = 17 students, C = 10 students, D= 0 Students, E= 1 Students C Class, Grade distribution: A = 16 students, B= 13 Students, and C = 10 Students <p>Complete achievements on each CLO per student can be seen in Appendix 4</p>
Teaching Observation	<p>Materials were delivered in Indonesia. The student could understand the materials well.</p> <ul style="list-style-type: none"> In A Class: there were 4 students poor on both CLO 1, 5 student poor on both CLO 2, 4 student poor on CLO 3, 5 student poor on CLO 4, 5 student poor on CLO 5, 3 student poor on CLO 6, 3 student poor on CLO 7, 3 student poor on CLO 8 In B Class: there were 2 students poor on both CLO 1, 1 student poor on both CLO 2, 1 student poor on CLO 3, 1 student poor on CLO 4, 2 student poor on CLO 5, 1 student poor on CLO 6, 1 student poor on CLO 7, 2 student poor on CLO 8 In C Class: there were 2 students poor on both CLO 1, 2 student poor on CLO 3, 1 student poor on CLO 4, 1 student poor on CLO 5, 1 student poor on CLO 6, 3 student poor on CLO 8
Learning Constraints	A,B and C Class: Lack of practice in the field makes it

	difficult for students to understand the production function of production economics
Recommendation	<p>A Class: Paying more attention for students who hardly understand the materials</p> <p>B Class: Paying more attention for students who hardly understand the materials. Number of students should be split in A class. So each class has same number of students.</p> <p>C Class: Paying more attention for students who hardly understand the materials</p>

Appendix 1. Scoring Matrix

Nomenclature	Weight	Final Score	
		Letter Mark	Score average
Assignment	20%	A	80 – 100
Midle semester test	20%	B	70 - <80
Final semester test	20%	C	55 - <70
Practice	30%	D	50 - < 55
Presence	10%	E	0 - <50

Appendix 2. Question samples

1. Explain what you know about operations research? Explain the benefits you get after studying operations research!

2. A nutritionist is designing a diet menu with two types of foods for breakfast (X_1) and lunch (X_2). Both types of food contain vitamins and protein. Type of food X_1

at least 10 units are produced, and the type of food X_2

at least 5 units produced. Table below

it shows the amount of vitamins and protein of each type of food.

Content type	X_1	X_2	Minimum requirement (kcal)
Vitamin	2	3	60
Protein	4	2	80
Cost per unit (Rp)	20A	40A	

Define combination X_1 and X_2 on cost minimum, and how much cost minimum the?

Solve with the graphical method.

Information:

A = your absence number

So if your Absent number is 10, then the cost is X

$$X_1 = 20 \cdot 10 = 200 \text{ and cost } X_2 = 40 \cdot 10 = 400$$

3. Solve the problems below using the simplex method!

A seamstress has 30 meters of woven fabric and 24 meters of cotton fabric to produce 2 types

clothing, namely type I clothing and type II goods. A type I garment requires 2 meters of woven fabric and 1 meter of cotton cloth. While type II goods require 1 meter of woven fabric and 2 meters of fabric cotton. The price of type I is 40,000 and the price of type II is 30,000. What is the optimal production and maximum income?

4. What is meant by forecasting? One method of forecasting quantitatively is by using trend calculation, try to predict how the sales of PT. Numani Food in 2021 and Year

2022 based on the following sales data:

No.	Year	Sales (Y)	Information
1	2010	35A	A = your absence number
2	2011	50A	Example:
3	2012	55A	And 2010 = 35A
4	2013	67A	→ If your Absence number is 45
5	2014	75A	50
6	2015	80A	$Y_{2010} = 35 + 45 = 1.575 \text{ unit}$
7	2016	78A	
8	2017	99A	
9	2018	135A	
10	2019	178A	

C Class

Meeting s	CLO 1 (%)	CLO 2 (%)	CLO 3 (%)	CLO 4 (%)	CLO 5 (%)	CLO 6 (%)	CLO 7 (%)	CLO 8 (%)
1	78.85							
2		88.96						
3			80.85					
4				74.60				
5					79.86			
6						70.70		
7							65.00	
8								85.00
Average	78.85	88.96	80.85	74.60	79.86	70.70	65.00	85.00
Predicate	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Standard

Std num-based AI		Weighted avg LO based AI	
70 <= AI	HIGH	70 <= AI	EXCELLENT
60 <= AI < 70	MEDIUM	60 <= AI < 70	SATISFACTORY
50 <= AI < 60	LOW	50 <= AI < 60	DEVELOPING
AI < 50	VERY LOW	AI < 50	UNSATISFACTORY

B class

Matrik Rekap Nilai Akhir Mahasiswa																														
No.	NPM	NAMA	SUB-CPMK/BOBOT (NILAI HARIAN)										NILAI HARIAN		UAS	angka	HURUF													
			1	2	3	4	5	6	7	8	Skala 15%	Skala 100																		
			skala 4*10%	skala 4*20%	skala 4*10%	skala 4*10%	skala 4*10%	skala 4*10%	skala 4*15%	skala 4*10%																				
1	21401032057	ULUL AZMI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.9	E												
2	21701032044	HARBI PRAMANA	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	58	75	77.5	B										
3	21701032045	MUHAMMAD FAJAR MAULANA	2	0.2	2	0.4	2	0.2	2	0.2	2	0.3	2	0.2	2	0.3	43.85	60	64	C										
4	21701032046	ALI MAS'UD	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	40	75	77.5	B									
5	21701032047	ANITA SARI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	80	75	77.5	B									
6	21701032048	DWI JAYANTI MANDA SARI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	72.7	80	60	64	C									
7	21701032049	META ROSALINA	4	0.4	4	0.8	4	0.4	3	0.3	3	0.3	3	0.45	3	0.3	76.3	70	85	86.5	A									
8	21701032050	TAUFIQ FIRMANSYAH	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	72.7	70	60	64	C									
9	21701032051	AINAYA PUTRI MAGFIROH	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	65	75	77.5	B									
10	21701032053	FERDIANSAH EKA SAPUTRA	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	72.7	64	75	77.5	B									
11	21701032054	ALDYFERDIAN MAHESTA JA	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	72.7	65	75	77.5	B									
12	21701032055	MILKA SILVIA C.D.	4	0.4	4	0.8	4	0.4	3	0.3	3	0.3	3	0.45	3	0.3	76.3	65	80	82	A									
13	21701032056	MOCH. HELMI FAUZI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	65	75	77.5	B									
14	21701032057	KUNANTO PRAMUJI	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	43.85	85	75	76.9	B									
15	21701032058	ADI PUTRA PRATAMA	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	72.7	70	60	64	C									
16	21701032059	AHMAD AL FARABBI	2	0.2	2	0.4	2	0.2	3	0.3	3	0.3	3	0.45	3	0.3	76.3	86	60	64	C									
17	21701032060	MUHAMMAD QORY FAUZI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	89.45	86	75	77.5	B									
18	21701032061	M. AUFAN NASRULLAH	2	0.2	2	0.4	2	0.2	3	0.3	3	0.3	3	0.45	3	0.3	89.45	86	60	64	C									
19	21701032062	ALVIN YUDIANTO	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	72.7	60	75	77.5	B									
20	21701032063	MOHAMAD TAEDY DWI SAPU	3	0.3	3	0.6	3	0.3	0	0	0	0	0	0	0	0	1.2	7.5	85	75	77.5	B								
21	21701032064	AHMAD KHUSNI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	72.7	60	60	64	C									
22	21701032066	NURUL HANIFAH	2	0.2	2	0.4	2	0.2	3	0.3	3	0.3	3	0.45	3	0.3	89.45	90	60	64	C									
23	21701032067	DIDI SURYADIN	3	0.3	3	0.6	3	0.3	2	0.2	2	0.2	2	0.3	2	0.2	72.7	96	75	76.9	B									
24	21701032068	MUHAMMAD RIFKI	2	0.2	2	0.4	2	0.2	3	0.3	3	0.3	3	0.45	3	0.3	89.45	86	60	64	C									
25	21701032069	MUHAMMAD ROJABI THOYAL	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	89.45	86	75	76.3	B									
26	21701032071	RUSLIADI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	0	3.1	E								
27	21701032072	MARISSA TSANIA EL WARD	4	0.4	4	0.8	4	0.4	3	0.3	3	0.3	3	0.45	3	0.3	76.3	80	85	86.5	A									
28	21701032075	SITI AISYAH KOMALA	4	0.2	4	0.4	4	0.2	2	0.2	2	0.2	2	0.3	2	0.2	72.7	70	85	86.5	A									
29	21701032076	SYAFAROTUL KIROMAH	4	0.4	4	0.8	4	0.4	2	0.2	2	0.2	2	0.3	2	0.2	72.7	60	90	91	A									
30	21701032077	ISNAWIYAH	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	89.45	70	75	77.5	B									
31	21701032078	JOKO SUJATMIKO	2	0.2	2	0.4	2	0.2	3	0.3	3	0.3	3	0.45	3	0.3	76.3	96	60	62.8	C									
32	21701032079	YULI ARSIH	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	55	75	77.5	B									
33	21701032080	MOHAMAD HANIF ADHAWIJA	4	0.2	4	0.4	4	0.2	3	0.3	3	0.3	3	0.45	3	0.3	89.45	90	85	84.6	A									
34	21701032081	DWI ISMI AZIZAH	4	0.4	4	0.8	4	0.4	2	0.2	2	0.2	2	0.3	2	0.2	72.7	80	85	86.5	A									
35	21701032082	ZUHRUFI INDANA HUSNA	3	0.3	3	0.6	3	0.3	0	0	0	0	0	0	0	0	1.2	0	9	75	77.5	B								
36	21701032083	BRILYAN YOGA ADITYA PR	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	76.3	90	75	77.5	B									
Rata rata													2.77778	0.26666667	2.77778	0.533333	2.77778	0.266667	2.305556	0.230556	2.305556	0.345833	2.305556	0.230556	2.305556	0.345833	Presentase Nilai Mahasiswa A		19.44444 %	
Konversi													70.50444	6.66666667	79.44444	13.33333	60.45444	6.666667	57.63889	5.763889	67.88889	5.763889	57.63889	8.645833	47.83889	5.763889	56.93889	Presentase Nilai Mahasiswa B		47.22222 %
																											Presentase Nilai Mahasiswa C		27.77778 %	
																											Presentase Nilai Mahasiswa D		0 %	
																											Presentase Nilai Mahasiswa E		2.77778 %	
																											Nilai mahasiswa lulus		94.44444 %	
																											Nilai Mahasiswa tidak lulus		2.77778 %	

No.	NPM	NAMA	SCORE							
			CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	CLO 7	CLO 8
1	21401032057	ULUL AZMI	0	0	0	0	0	0	0	0
2	21701032044	HARBI PRAMANA	90	60	55	60	50	54	55	56
3	21701032045	MUHAMMAD FAJAR MAULANA	90	60	55	80	80	90	80	89
4	21701032046	ALI MAS'UD	70	73	70	63	71	73	78	80
5	21701032047	ANITA SARI	70	73	70	63	71	73	78	80
6	21701032048	DWI JAYANTI MANDA SARI	60	65	58	70	75	75	70	76
7	21701032049	META ROSALINA	70	73	70	63	71	73	78	80
8	21701032050	TAUFIQ FIRMANSYAH	60	65	58	70	75	75	70	76
9	21701032051	AINAYA PUTRI MAGFIROH	70	73	70	63	71	73	78	80
10	21701032053	FERDIANSAH EKA SAPUTRA	60	65	58	70	75	75	70	76
11	21701032054	ALDYFERDIAN MAHESTA JA	70	73	70	63	71	73	78	80
12	21701032055	MILKA SILVIA C.D.	70	73	70	63	71	73	78	80
13	21701032056	MOCH. HELMI FAUZI	70	73	70	63	71	73	78	80
14	21701032057	KUNANTO PRAMUJI	90	80	90	85	86	80	87	89
15	21701032058	ADI PUTRA PRATAMA	60	65	58	70	75	75	70	76
16	21701032059	AHMAD AL FARABBI	70	73	70	63	71	73	78	80
17	21701032060	MUHAMMAD QORY FAUZI	90	80	90	85	86	80	87	89
18	21701032061	M. AUFAN NASRULLAH	90	80	90	85	86	80	87	89
19	21701032062	ALVIN YUDIANTO	60	65	58	70	75	75	70	76
20	21701032063	MOHAMAD TAEDY DWI SAPU	60	65	58	70	75	75	70	76
21	21701032064	AHMAD KHUSNI	60	65	58	70	75	75	70	76
22	21701032066	NURUL HANIFAH	90	80	90	85	86	80	87	89
23	21701032067	DIDI SURYADIN	60	65	58	70	75	75	70	76
24	21701032068	MUHAMMAD RIFKI	90	80	90	85	86	80	87	89
25	21701032069	MUHAMMAD ROJABI THOYAL	90	80	90	85	86	80	87	89
26	21701032071	RUSLIADI	70	73	70	63	71	73	78	80
27	21701032072	MARISSA TSANIA EL WARD	70	73	70	63	71	73	78	80
28	21701032075	SITI AISYAH KOMALA	60	65	58	70	75	75	70	76
29	21701032076	SYAFAROTUL KIROMAH	60	65	58	70	75	75	70	76
30	21701032077	ISNAWIYAH	90	80	90	85	86	80	87	89
31	21701032078	JOKO SUJATMIKO	70	73	70	63	71	73	78	80
32	21701032079	YULI ARSIH	70	73	70	63	71	73	78	80
33	21701032080	MOHAMAD HANIF ADHAWIJA	90	80	90	85	86	80	87	89
34	21701032081	DWI ISMI AZIZAH	60	65	58	70	75	75	70	76
35	21701032082	ZUHRUFI INDANA HUSNA	60	65	58	70	75	75	70	0
36	21701032083	BRILYAN YOGA ADITYA PR	70	73	70	63	71	73	78	80

C Class

Matrik Rekap Nilai Akhir Mahasiswa																								
No.	NPM	NAMA	SUB-CPMK/BOBOT (NILAI HARIAN)														NILAI HARIAN	UTS	UAS	angka	HURUF			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14								
		skala 4*10%		skala 4*20%		skala 4*10%		skala 4*10%		skala 4*10%		skala 4*15%		skala*10%		skala*15%		Skala 4	Skala 100					
1	21701032028	AHMAD NASRUL MAHASIN	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	2	0.3	2	70	60	60	63.4	C
2	21701032041	MUCHAMMAD RIDWAN ABDUL	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	2	0.3	2	58	50	60	64	C
3	21701032073	FANDY	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	2	0.3	2	43.85	0	60	64	C
4	21701032084	IZZAN FAIQOH	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	40	85	86.5	A
5	21701032085	MUHAMMAD ALFI RIDHANSY	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.4	3	0.3	3	0.45	3	76.3	80	75	77.5	B
6	21701032086	AHMAD SYAEKHUL UMAM	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	72.7	80	75	77.5	B
7	21701032087	BIMA FAJAR BAHARI	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	70	85	86.5	A
8	21701032088	MOHAMMAD AMRU UBADILL	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	72.7	70	75	76.9	B
9	21701032089	LIKAH TRISNA ROSIDAH	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.4	3	0.4	3	0.45	3	76.3	65	75	77.5	B
10	21701032090	SALVITA AYU MAYANGSARI	4	0.4	4	0.8	4	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.1	72.7	64	85	86.5	A
11	21701032091	ABDUL BARRY MARSIANOOR	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	72.7	65	75	76.3	B
12	21701032092	WARDATUS SHOLEHAH	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	65	85	86.5	A
13	21701032093	NOVITA MAULIDINA	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	65	85	86.5	A
14	21701032094	RIFQI A'WANIL ABDI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.2	2	0.3	2	0.2	2	0.3	2	43.85	85	60	62.8	C
15	21701032095	RIZKI ZULKARNAIN	2	0.2	2	0.4	2	0.2	2	0.2	2	0.3	2	0.45	2	0.3	2	0.45	2.6	72.7	70	60	62.8	C
16	21701032096	SITI ULIN NAFIQOH	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	86	85	86.5	A
17	21701032097	NURUL FITRIA	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	89.45	86	75	77.5	B
18	21701032100	FINA MIRAYANTI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.3	2	0.45	2	0.3	2	0.45	2.6	89.45	86	60	64	C
19	21701032101	RIZA FARADIBA	4	0.4	4	0.8	4	0.4	4	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.4	72.7	60	85	86.5	A
20	21701032102	NUR LAILI 'IRFAN WAHYU	4	0.4	4	0.8	4	0.4	4	0.2	2	0.2	2	0.3	2	0.2	2	0.3	2.8	75.5	85	85	86.5	A
21	21701032103	JAENAH ELMI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	72.7	60	75	77.5	B
22	21701032104	MAHMUDI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.3	2	0.45	2	0.3	2	0.45	2.6	89.45	90	60	62.8	C
23	21701032106	M. FAUZAN AKMALUDIN	2	0.2	2	0.4	2	0.2	2	0.2	2	0.3	2	0.45	2	0.3	2	0.45	2.6	72.7	96	60	63.4	C
24	21701032107	NI MADE PUTRI AGUSTINI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	89.45	86	75	76.3	B
25	21701032109	ARIYADI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	89.45	86	75	77.5	B
26	21701032110	M. IMAM MUSTOFA	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.4	3	0.4	3	0.4	3.5	89	86	75	77.5	B
27	21701032111	NATASHA ANGELINE	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	80	85	86.5	A
28	21701032112	SURYADI	4	0.4	4	0.8	4	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.1	72.7	70	85	86.5	A
29	21701032114	SHIVARA YAN FIRDAUSYA	4	0.4	4	0.8	4	0.4	4	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.4	72.7	60	85	86.5	A
30	21701032115	SHINTA PRAMESTI SURYO	4	0.4	4	0.8	4	0.4	4	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.4	89.45	70	85	85.9	A
31	21701032116	NUR KHABIBATUR ROHMAH	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	96	85	86.5	A
32	21701032117	MUHAMMAD NAILUL AQSHO	2	0.2	2	0.4	2	0.2	2	0.2	2	0.4	2	0.6	2	0.4	2	0.6	3.2	76.3	55	60	63.4	C
33	21701032118	FEBRIANTI MAGGELLANG	4	0.4	4	0.8	4	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3.1	89.45	90	85	86.5	A
34	21701032120	SITI NURHALIZA	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	72.7	80	75	77.5	B
35	21701032122	DEVI INDAH MASUFUFAH	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.45	3	0.3	3	0.45	3	80	90	75	76.9	B
36	21701032124	TIARA MURSUYDAH	4	0.4	4	0.8	4	0.4	4	0.4	4	0.4	4	0.6	4	0.4	4	0.6	4	76.3	90	85	86.5	A
37	21701032126	RINI LESTARI	3	0.3	3	0.6	3	0.3	3	0.3	3	0.3	3	0.4	3	0.4	3	0.4	3.5	82.45	90	75	77.5	B
38	21701032127	HASAN AZZAKI AL ASKARI	2	0.2	2	0.4	2	0.2	2	0.2	2	0.4	2	0.6	2	0.4	2	0.6	3.1	78.25	90	60	63.4	C
39	21701032128	NOVIA DWI ALASTIA	4	0.4	4	0.8	4	0.4	4	0.4	4	0.3	3	0.4	4	0.4	4	0.6	3.9	68.25	90	84	85	A
Rata rata			3.2	0.3	3.2	0.6	3.2	0.3	3.2	0.3	3.2	0.3	3.2	0.5	3.2	0.3	3.2	0.5	Prosentase Nilai Mahasiswa A			41.02564	%	
Konversi			78.85	7.88	88.96	15.38	80.85	7.69	74.60	7.92	79.86	7.99	70.70	11.98	65.00	7.99	85.00	11.98	Prosentase Nilai Mahasiswa B			33.33333	%	
																			Prosentase Nilai Mahasiswa C			25.64103	%	
																			Prosentase Nilai Mahasiswa D			0	%	
																			Prosentase Nilai Mahasiswa E			0	%	
																			Nilai mahasiswa lulus			100	%	
																			Nilai Mahasiswa tidak lulus			0	%	

No.	NPM	NAMA	SCORE	SCORE	SCORE	SCORE	SCORE	SCORE	SCORE	SCORE
			CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	CLO 7	CLO 8
1	21701032028	AHMAD NASRUL MAHASIN	80	70	80	90	90	80	70	60
2	21701032041	MUCHAMMAD RIDWAN ABDUL	50	60	50	60	50	54	55	50
3	21701032073	FANDY	90	60	50	60	50	90	80	89
4	21701032084	IZZAN FAIQOH	70	73	70	63	71	73	78	80
5	21701032085	MUHAMMAD ALFI RIDHANSY	70	73	70	63	71	73	78	80
6	21701032086	AHMAD SYAEKHUL UMAM	60	65	58	70	75	75	70	76
7	21701032087	BIMA FAJAR BAHARI	70	73	70	63	71	73	78	80
8	21701032088	MOHAMMAD AMRU UBADILL	60	65	58	70	75	75	70	76
9	21701032089	LIKAH TRISNA ROSIDAH	70	73	70	63	50	73	78	80
10	21701032090	SALVITA AYU MAYANGSARI	60	65	58	70	75	75	70	76
11	21701032091	ABDUL BARRY MARSIANOOR	60	65	58	70	75	75	70	76
12	21701032092	WARDATUS SHOLEHAH	70	73	70	63	71	73	78	80
13	21701032093	NOVITA MAULIDINA	70	73	70	63	71	73	78	80
14	21701032094	RIFQI A'WANIL ABDI	90	65	58	70	75	90	80	89
15	21701032095	RIZKI ZULKARNAIN	60	65	58	70	75	75	70	76
16	21701032096	SITI ULIN NAFIQOH	70	73	70	50	71	73	78	80
17	21701032097	NURUL FITRIA	90	80	90	85	86	80	87	89
18	21701032100	FINA MIRAYANTI	90	80	90	89	86	80	87	89
19	21701032101	RIZA FARADIBA	60	65	58	70	75	75	70	76
20	21701032102	NUR LAILI 'IRFAN WAHYU	60	65	58	70	75	75	70	50
21	21701032103	JAENAH ELMI	60	65	58	70	75	75	70	76
22	21701032104	MAHMUDI	90	80	90	85	86	80	87	89
23	21701032106	M. FAUZAN AKMALUDIN	60	65	58	70	75	75	70	76
24	21701032107	NI MADE PUTRI AGUSTINI	90	80	90	85	86	80	87	89
25	21701032109	ARIYADI	90	80	90	85	86	80	87	89
26	21701032110	M. IMAM MUSTOFA	90	80	90	85	86	80	87	80
27	21701032111	NATASHA ANGELINE	70	73	70	63	71	73	78	80
28	21701032112	SURYADI	60	65	58	70	75	75	70	76
29	21701032114	SHIVARA YAN FIRDAUSYA	60	65	58	70	75	75	70	76
30	21701032115	SHINTA PRAMESTI SURYO	90	80	90	85	86	80	87	89
31	21701032116	NUR KHABIBATUR ROHMAH	70	73	70	63	71	73	78	80
32	21701032117	MUHAMMAD NAILUL AQSHO	70	73	70	63	71	73	78	80
33	21701									