



PORTFOLIO

Department of Agrotechnology

Faculty of Agriculture

University of Islam Malang

Subject	Experimental Design
Module Level,if available	Undergraduate Study Program of Agrotechnology
Subject Code	MKW60613
Type of course	Applied Science
Credits	3 credits/5.1 ECTS
Semester	IV
Prerequisite	Statistics
Parallel Class	A, B and C
Module Description	This course provides students with an in-depth understanding of the theory and concepts of experimental design and the elements in experimental design, experimental design models in agriculture, analysis of variance models and further testing as well as interpreting research results according to the experimental design model used (which is appropriate). Students able to apply the principles of experimental design in a research in the field of Agrotechnology.
Learning Outcomes	<p>Course Learning Outcomes(CLO)</p> <p>CLO 1. Comprehending theoretical concept of experimental design</p> <p>CLO 2. Being able to conduct a research with the right design</p> <p>CLO 3. Able to solve problems that arise in the field of agrotechnology and related fields of science by research</p> <p>CLO 4. Able to evaluate a research appropriately</p>
Learning Content	<p>After completing this subject students are able to:</p> <ol style="list-style-type: none"> 1. Study the science of experimental design includes: elements, models, data analysis and interpretation. 2. Solve research problems with the right experimental design. 3. Doing various kinds of treatment and randomized a research appropriately 4. Doing various kinds of model research, data analysis and interpretation appropriately
Aims	Students have competence in using experimental design, able to conduct a research with the right design and evaluate a research appropriately
Teaching Methods	Several methods applied in this course consist of lecturing, practicing, assignment, and group

	presentation. All these methods are applied on 3 parallel classes
Participant	<ul style="list-style-type: none"> • Class A: 35 students in total; 5th semester = 32 students; 9th semester = 3 students • Class B: 33 students in total; 5th semester = 28 students; 7th semester = 2 students, and 9th semester = 3 students • Class C: 35 students in total; 5th semester = 31 students; 9th semester = 4 students
Teaching Attendance	14 meetings were completely held (100%) by lecturer (Class A, B and C) All students from Class A, B, and C are 100% teaching attendance
Evaluation System	Component of assessment on this course consist of regular assignment, midle semester test and final semester test, presence and practice. All these component are then combined to obtain final score. Scoring matrices and question samples are available in Appendix 1 and Appendix 2
Learning Result	<ul style="list-style-type: none"> • Achievement CLO in Class A CLO1 = 80.17 (Excellent) CLO2 = 82.35 (Excellent) CLO 3 = 77.42 (Excellent) CLO 4 = 76.11 (Excellent) • Achievement CLO in Class B CLO 1 = 80.43 (Excellent) CLO 2 = 82.35 (Excellent) CLO 3 = 77.98 (Excellent) CLO 4 = 77.15 (Excellent) • Achievement CLO in Class C CLO 1 = 80.27 (Excellent) CLO 2 = 81.32 (Excellent) CLO 3 = 77.03 (Excellent) CLO 4 = 76.34 (Excellent) <p>Complete achievement on average CLO can be seen on Appendix 3</p>
Statistical Distribution	<ul style="list-style-type: none"> • Class A, score distribution: A= 13 students (37.14%), B = 17 students (48.57%), C= 3 student (8.57%) and D (failed) = 2 students (5.72%) • Class B, score distribution: A = 6 students (18.18%), B = 15 students (45.46%), C = 10 students (30.30%), and D (failed) = 2 students (6.06%)

	<ul style="list-style-type: none"> Class C, score distribution: A= 9 students (25.71%), B = 7 students (20.00%), C = 15 students (42.86%) and D (failed) = 4 students (11.43%) <p>Complete achievement on each student can be seen on Appendix 4</p>
Teaching Observation	<p>Materials were delivered in Indonesia. The student could understand the materials well.</p> <p>In Class A: there was 1 student poor on CLO 3 and 4. He was from 9th semester. There were 2 students failed because poor on final test and practice.</p> <p>In Class B: there were 2 students poor on both CLO 3 and 4, 1 student poor on CLO 3, three of them were from 7th semester and above. 2 students were failed because poor on final test and practice.</p> <p>In Class C: there were 2 students poor on both CLO 3 and 4, 2 students poor on both CLO 3, three of them were 9th semester. 4 students were failed because poor on final test and practice.</p>
Learning Constraints	Class A, B and C: students have not taken the research methods course makes it difficult for understanding the science of experimental design includes elements, models, data analysis and interpretation.
Recommendation	Class A, B and C: Paying more attention for students who hardly understand the materials

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. In carrying out a research, it begins with finding and formulating a problem, then determining the treatment to be tested. Explain what is meant by treatment and the type of treatment and give examples of treatment! (CLO 1)
2. Explain the steps in conducting research! Why does a research require experimental design? And how to apply the elements of experimental design in a research! (CLO 1)
3. Describe the requirements (assumptions) that must be met to select: (CLO 2)
 - a. Completely Randomized Design (CRD) !
 - b. Randomized Block Design (RBD) !
 - c. Latin Square Design (LSD)!
4. Create a research plan with an appropriate experimental design (choose one of the factorial experimental designs, factorial experimental designs with controls and split plot experimental designs) which includes: a) Research title, b) Research objectives, c) Tried treatment, d, Basic design /environment used, and e) Randomization model and experimental lay out. (CLO 3)
5. A study on the effect of giving water with urea fertilizer on lettuce plants (Andewi plants). As the main plot is the provision of water (A) which consists of: a1 = giving water by adding water, and a2 = giving water by digging. Meanwhile, as a sub-plot, the dose of Urea fertilizer consisted of: u1 = 125 grams/plot, u2 = 250 grams/plot, u3 = 375 grams/plot, and u4 = 500 grams/plot. From these two factors, 8 treatment combinations were obtained and repeated 3 times. The plot size is 1.5 m x 1.5 m with a spacing of 25 cm x 25 cm so that there are 25 plants per plot. The study was conducted on land that was previously planted with rice where there was a water channel on one side of the land. The yield of fresh stover is shown in Table 1.

Table 1. Yield of fresh Andewi plant stover (Ons/plot) (CLO 4)

Treatment		Yield of fresh Andewi Plant (Ons) at Repeated		
The provision of water	The dose of Urea fertilizer	1	2	3
a ₁	u ₁	16.15	16.57	16.13
	u ₂	15.66	15.57	15.42
	u ₃	16.52	16.00	16.28
	u ₄	19.11	19.09	18.57
a ₂	u ₁	19.05	19.65	19.36
	u ₂	19.34	19.95	19.11
	u ₃	20.55	20.38	22.30
	u ₄	20.26	21.12	20.30

Question :

- What experimental design and baseline/environment design should be used?
- Explain how to randomize treatment and make a plan from the research above!
- Calculate analysis of variance (F test) with 5% significance level! Explain the interpretation!
- Calculate the follow-up test with BNJ level 5%! Explain the interpretation!

Appendix 3. Achievement of CLO

Class A

Meetings	CLO 1 (%)	CLO 2 (%)	CLO 3 (%)	CLO 4 (%)
1	80			
2-3		80		
4	80			
5		82		
6-7		82		
8-9			77	
10-11			77	
12-13			77	
14				76
Average	80.0	81.3	77.0	76.0
Predicate	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT

Class B

Meetings	CLO 1 (%)	CLO 2 (%)	CLO 3 (%)	CLO 4 (%)
1	81			
2-3		82		
4	80			
5		81		
6-7		81		
8-9			78	
10-11			78	
12-13			78	
14				77
Average	80.5	81.3	78.0	77.0
Predicate	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT

Class C

Meetings	CLO 1 (%)	CLO 2 (%)	CLO 3 (%)	CLO 4 (%)
1	80			
2-3		82		
4	80			
5		81		
6-7		81		
8-9			76	
10-11			78	
12-13			77	
14				76
Average	80.0	81.3	77.0	76.0
Predicate	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	VERYLOW	AI<50	UNSATISFACTORY

Appendix 4. Achievement on each student

Class A

No.	NPM	Nama Mahasiswa	SUB-CPMK/BOBOT (NILAI HARIAN)																		NILAI HARIAN (Assignment) (15%)	Middle Test (30%)	Final Test (30%)	Presence (10%)	Practice (15%)	Final Score		
			1		2		3		4		5		6		7		8		9							Angka	Huruf	
			5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%								
1	21601031055	RIZAL HABIBI	70	3.50	73	7.30	69	3.45	73	7.30	70	7.00	70	10.50	70	10.50	68	10.20	69	10.35	70	60	50	100	35	58.77	C	
2	21601031087	EKO IRWAN SAPUTRA	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	75	11.25	80	12.00	75	11.25	75	11.25	80	60	50	100	68	65.16	C	
3	21601031090	FARSI ANTONI	70	3.50	72	7.20	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	70	10.50	70	10.50	70	70	60	100	73	70.48	B	
4	21801031001	PRADITA PRIMA DEVIYANT	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	85	85	100	82	85.25	A	
5	21801031003	BHISMA VEGISTA PUTRA PURWANT	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	75	75	100	80	78.93	B	
6	21801031004	FERI ADI KURNIAWAN	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	75	11.25	80	12.00	75	11.25	75	11.25	80	80	79	100	82	81.96	A	
7	21801031005	MUHAMMAD AGUNG HIDAYAT	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	80	80	100	85	82.79	A	
8	21801031006	MUHAMMAD FADIL	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	70	40	100	56	63.35	C	
9	21801031008	MUHAMMAD KHOIRURROZZIKIN	85	4.25	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	79	11.85	75	11.25	80	70	60	100	77	72.56	B	
10	21801031009	SINDRA	80	4.00	85	8.50	85	4.25	85	8.50	80	8.00	79	11.85	79	11.85	75	11.25	79	11.85	80	70	25	100	0	50.51	D	
11	21801031010	DEWI IANAH	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	80	80	100	81	82.08	A	
12	21801031011	USAGI FARROZIN SHIDQII	80	4.00	85	8.50	75	3.75	80	8.00	80	8.00	80	12.00	80	12.00	75	11.25	80	12.00	80	75	70	100	81	77.58	B	
13	21801031012	FITA FATMA PRATAMA	80	4.00	80	8.00	85	4.25	80	8.00	85	8.50	80	12.00	80	12.00	80	12.00	75	11.25	80	80	80	100	84	82.60	A	
14	21801031013	MUHAMMAD SYAH RIZAL	85	4.25	85	8.50	80	4.00	85	8.50	85	8.50	74	11.10	80	12.00	80	12.00	75	11.25	80	75	70	100	81	77.67	B	
15	21801031014	AL AMIN	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	70	60	100	72	71.73	B	
16	21801031016	MIKE SEPTIA PUTRI	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	83	12.45	80	12.00	80	12.00	80	80	80	100	80	82.07	A	
17	21801031017	MOCHAMAD ALEX	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	80	12.00	76	11.40	75	11.25	74	11.10	80	70	60	100	69	71.31	B	
18	21801031018	VIVI ALAYDA FATIKASARI	80	4.00	80	8.00	80	4.00	80	8.00	85	8.50	80	12.00	78	11.70	79	11.85	78	11.70	80	80	90	100	84	85.56	A	
19	21801031020	ABDUL AJI	85	4.25	85	8.50	80	4.00	80	8.00	85	8.50	80	12.00	76	11.40	79	11.85	79	11.85	80	70	60	100	67	71.10	B	
20	21801031021	INDRA DWI AGUSTIN	80	4.00	85	8.50	80	4.00	85	8.50	80	8.00	78	11.70	79	11.85	80	12.00	76	11.40	80	77	77	100	82	80.49	A	
21	21801031023	LALU MUHAMMAD DAUD	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	70	55	100	72	70.34	B	
22	21801031024	ARIFATUS SOLIHA	85	4.25	87	8.70	85	4.25	86	8.60	86	8.60	85	12.75	85	12.75	82	12.30	83	12.45	85	80	85	100	83	84.65	A	
23	21801031025	RAGIL BHAKTI AJI	85	4.25	87	8.70	85	4.25	86	8.60	86	8.60	85	12.75	85	12.75	82	12.30	83	12.45	85	80	85	100	76	83.60	A	
24	21801031026	MUHAMMAD IRVAN	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	70	30	100	0	51.95	D	
25	21801031027	ABDURROHMAN SHOLEH	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	70	60	100	71	71.58	B	
26	21801031028	ACHMAD SYAMSU DUCHA	80	4.00	85	8.50	75	3.75	80	8.00	80	8.00	80	12.00	80	12.00	75	11.25	80	12.00	80	70	68	100	78	75.03	B	
27	21801031029	AULIA MOHAMMAD RAHMAN	80	4.00	80	8.00	85	4.25	80	8.00	85	8.50	80	12.00	80	12.00	80	12.00	75	11.25	80	70	65	100	60	71.50	B	
28	21801031030	ARIF GUNAWAN	85	4.25	85	8.50	80	4.00	85	8.50	85	8.50	74	11.10	80	12.00	80	12.00	75	11.25	80	70	65	100	60	71.52	B	
29	21801031031	MITHA MIFTAHUL JANNAH	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	80	75	100	78	80.13	A	
30	21801031032	MILA SA'DIYAH ROHMAH	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	80	80	100	85	82.70	A	
31	21801031033	MOHAMMAD HADZIQ S.A	75	3.75	80	8.00	75	3.75	80	8.00	80	8.00	75	11.25	74	11.10	70	10.50	70	10.50	75	70	65	100	65	71.48	B	
32	21801031036	DIDAN FAIK FUADI	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	80	80	100	79	81.80	A	
33	21801031049	ROFIX FERNANDA	70	3.50	72	7.20	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	70	10.50	70	10.50	70	70	65	100	68	71.23	B	
34	21801031060	RAHMAT SAMSUDIN	80	4.00	85	8.50	80	4.00	85	8.50	80	8.00	78	11.70	79	11.85	80	12.00	76	11.40	80	70	70	100	82	76.29	B	
35	21801031068	ADE NAJIB RISWANI	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	75	11.25	70	10.50	70	10.50	70	10.50	75	70	65	100	69	72.06	B	
Jumlah Peserta : 35			80.57	4.03	82.17	8.22	80.17	4.01	82.54	8.25	82.34	8.23	77.20	11.58	77.94	11.69	77.06	11.56	76.11	11.42								
% Mahasiswa tidak lulus																										5.72		
% Mahasiswa nilai A																										37.14		
% Mahasiswa nilai B																										48.57		
% Mahasiswa nilai C																										8.57		

No.	NPM	Nama Mahasiswa	CLO 1	CLO 2	CLO 3	CLO 4
			Score	Score	Score	Score
1	21601031055	RIZAL HABIBI	70	72	69	69
2	21601031087	EKO IRWAN SAPUTRA	85	85	77	75
3	21601031090	FARSI ANTONI	70	71	70	70
4	21801031001	PRADITA PRIMA DEVIYANT	80	83	79	75
5	21801031003	BHISMA VEGISTA PUTRA PURWANT	80	85	76	77
6	21801031004	FERI ADI KURNIAWAN	85	85	77	75
7	21801031005	MUHAMMAD AGUNG HIDAYAT	86	84	77	80
8	21801031006	MUHAMMAD FADIL	80	83	79	75
9	21801031008	MUHAMMAD KHOIRURROZZIKIN	83	83	79	75
10	21801031009	SINDRA	83	83	78	79
11	21801031010	DEWI IANAH	80	80	79	79
12	21801031011	USAGI FARROZIN SHIDQII	78	82	78	80
13	21801031012	FITA FATMA PRATAMA	83	82	80	75
14	21801031013	MUHAMMAD SYAH RIZAL	83	85	78	75
15	21801031014	AL AMIN	80	85	76	77
16	21801031016	MIKE SEPTIA PUTRI	80	80	81	80
17	21801031017	MOCHAMAD ALEX	85	85	77	74
18	21801031018	VIVI ALAYDA FATIKASARI	80	82	79	78
19	21801031020	ABDUL AJI	83	83	78	79
20	21801031021	INDRA DWI AGUSTIN	80	83	79	76
21	21801031023	LALU MUHAMMAD DAUD	86	84	77	80
22	21801031024	ARIFATUS SOLIHA	85	86	84	83
23	21801031025	RAGIL BHAKTI AJI	85	86	84	83
24	21801031026	MUHAMMAD IRVAN	80	83	79	75
25	21801031027	ABDURROHMAN SHOLEH	80	85	76	77
26	21801031028	ACHMAD SYAMSU DUCHA	78	82	78	80
27	21801031029	AULIA MOHAMMAD RAHMAN	83	82	80	75
28	21801031030	ARIF GUNAWAN	83	85	78	75
29	21801031031	MITHA MIFTAHUL JANNAH	80	85	76	77
30	21801031032	MILA SA'DIYAH ROHMAH	80	83	79	75
31	21801031033	MOHAMMAD HADZIQ S.A	75	80	73	70
32	21801031036	DIDAN FAIK FUADI	80	83	79	75
33	21801031049	ROFIX FERNANDA	70	71	70	70
34	21801031060	RAHMAT SAMSUDIN	80	83	79	76
35	21801031068	ADE NAJIB RISWANI	80	80	72	70

Class B

No.	NPM	Nama Mahasiswa	SUB-CPMK/BOBOT (NILAI HARIAN)																		Nilai Harian (Assignment) 15%	Midle Test (30%)	Final Test (30%)	Presence (10%)	Practice (15%)	Final Score				
			1		2		3		4		5		6		7		8		9							Angka	Huruf			
			5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	15%	15%	15%	15%	15%	15%	15%	15%										
1	21601031052	HALIM	70	3.50	72	7.20	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	70	10.50	70	10.50	70	70	60	100	36	64.93	C			
2	21601031082	BRASTANGKORO GALIH SETO	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	80	12.00	80	12.00	80	12.00	80	80	0	75	100	40	50.50	D		
3	21601031085	PRAYOGO SULISTYONO	70	3.50	73	7.30	69	3.45	73	7.30	70	7.00	70	10.50	70	10.50	68	10.20	69	10.35	70	70	50	100	35	61.77	C			
4	21701031063	MUCHTAR ABDUL LATIF	72	3.60	73	7.30	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	68	10.20	67	10.05	70	70	50	100	37	62.00	C			
5	21701031064	M. IQBAL NASRULLAH	70	3.50	75	7.50	70	3.50	67	6.70	70	7.00	68	10.20	69	10.35	69	10.35	70	10.50	70	70	60	100	37	64.99	C			
6	21801031038	KHOIRUN NADHIFAH	80	4.00	85	8.50	75	3.75	80	8.00	80	8.00	80	12.00	80	12.00	75	11.25	80	12.00	80	75	70	100	75	76.68	B			
7	21801031039	SEKAR PUTRI LISNANWATI	80	4.00	80	8.00	85	4.25	80	8.00	85	8.50	80	12.00	80	12.00	80	12.00	75	11.25	80	80	75	100	88	81.70	A			
8	21801031040	MOH. ZEFI	85	4.25	85	8.50	80	4.00	85	8.50	85	8.50	74	11.10	80	12.00	80	12.00	75	11.25	80	70	60	100	43	67.47	C			
9	21801031042	AHMAD SYIFAUS SUDUR AL. GHOZI	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	50	50	100	0	51.93	D			
10	21801031043	SELLA KURNIA DWI NANDA	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	75	11.25	80	12.00	75	11.25	75	11.25	80	80	70	100	76	78.36	B			
11	21801031045	RAMA IDRIAS PERMANA	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	70	50	100	0	58.04	C			
12	21801031046	AJI FIKRI LEO KUSWOYO	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	70	65	100	55	70.70	B			
13	21801031047	DIYAN NIVITA SARI	85	4.25	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	79	11.85	75	11.25	80	80	70	100	76	78.41	B			
14	21801031048	MOH. ABDAL RATHOMI	80	4.00	85	8.50	85	4.25	85	8.50	80	8.00	79	11.85	79	11.85	75	11.25	79	11.85	80	70	50	100	43	64.46	C			
15	21801031050	AHMAD WA AFIRUL AQLI	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	80	70	100	74	78.03	B			
16	21801031051	M. DENI OKPRIANNOR	85	4.25	87	8.70	85	4.25	86	8.60	86	8.60	85	12.75	85	12.75	82	12.30	83	12.45	85	70	60	100	62	71.00	B			
17	21801031052	LUCKY HANDY ARDIANSYAH	80	4.00	85	8.50	85	4.25	80	8.00	80	8.00	79	11.85	79	11.85	79	11.85	79	11.85	80	70	60	100	81	73.17	B			
18	21801031053	ELSA ROSALIA LARASATI	85	4.25	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	80	12.00	80	12.00	79	11.85	80	75	70	100	75	76.77	B			
19	21801031054	FEBY SYAHARANI	80	4.00	85	8.50	80	4.00	80	8.00	80	8.00	79	11.85	80	12.00	82	12.30	78	11.70	80	75	75	100	79	78.90	B			
20	21801031055	ERWIN	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	80	12.00	80	12.00	79	11.85	80	77	77	100	82	80.48	A			
21	21801031056	ARIZA ALIF PRADANA	85	4.25	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	78	11.70	80	70	60	100	62	70.35	B			
22	21801031057	ZAINAL ABIDIN	86	4.30	86	8.60	85	4.25	86	8.60	85	8.50	84	12.60	83	12.45	84	12.60	84	12.60	85	80	78	100	72	80.88	A			
23	21801031058	INDAH MAULIDIYAH	80	4.00	80	8.00	85	4.25	87	8.70	79	7.90	80	12.00	79	11.85	78	11.70	78	11.70	80	75	75	100	72	77.82	B			
24	21801031059	MUHAMMAD REZA SYAHRUL	80	4.00	83	8.30	82	4.10	80	8.00	80	8.00	80	12.00	80	12.00	80	12.00	80	12.00	80	70	70	100	47	71.11	B			
25	21801031061	SRI RATNA NINGSIH	83	4.15	80	8.00	85	4.25	80	8.00	80	8.00	79	11.85	78	11.70	80	12.00	79	11.85	80	75	70	100	75	76.72	B			
26	21801031062	FENIA AKNANTASARI	85	4.25	85	8.50	85	4.25	85	8.50	80	8.00	85	12.75	87	13.05	85	12.75	84	12.60	85	75	75	100	85	80.45	A			
27	21801031063	MUAZIM	75	3.75	70	7.00	75	3.75	75	7.50	75	7.50	68	10.20	68	10.20	67	10.05	67	10.05	70	70	60	100	0	59.50	C			
28	21801031065	ENDAH NUR CAYANI	85	4.25	89	8.90	80	4.00	85	8.50	85	8.50	83	12.45	85	12.75	85	12.75	85	12.75	85	80	80	100	78	82.43	A			
29	21801031066	SELYANA MEILANIAN ANGGRAENI	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	83	12.45	80	12.00	80	12.00	80	80	80	100	75	81.32	A			
30	21801031067	RIAN ADI PRANATA	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	80	12.00	76	11.40	75	11.25	74	11.10	80	70	50	100	34	63.06	C			
31	21801031069	ADRIAN KURNIAWAN	80	4.00	80	8.00	80	4.00	80	8.00	85	8.50	80	12.00	78	11.70	79	11.85	78	11.70	80	70	70	100	85	76.71	B			
32	21801031070	VAN WIE BRAMASTA CAHYAPUTRA	85	4.25	85	8.50	80	4.00	80	8.00	85	8.50	80	12.00	76	11.40	79	11.85	79	11.85	80	70	50	100	33	63.00	C			
33	21801031071	MOCH. ALI RUSPENDI	80	4.00	85	8.50	80	4.00	85	8.50	80	8.00	78	11.70	79	11.85	80	12.00	76	11.40	80	70	60	100	75	72.24	B			
			80.64	4.03	81.45	8.15	80.21	4.01	81.09	8.11	80.67	8.07	77.88	11.68	78.27	11.74	77.79	11.67	77.15	11.57										
Jumlah Peserta : 33																											% Mahasiswa tidak lulus	6.06		
																												% Mahasiswa nilai A	18.18	
																													% Mahasiswa nilai B	45.46
																												% Mahasiswa nilai C	30.3	

No.	NPM	Nama Mahasiswa	CLO 1	CLO 2	CLO 3	CLO 4
			Score	Score	Score	Score
1	21601031052	HALIM	70	71	70	70
2	21601031082	BRASTANGKORO GALIH SETO	80	80	80	80
3	21601031085	PRAYOGO SULISTYONO	70	72	69	69
4	21701031063	MUCHTAR ABDUL LATIF	71	71	69	67
5	21701031064	M. IQBAL NASRULLAH	70	71	69	70
6	21801031038	KHOIRUN NADHIFAH	78	82	78	80
7	21801031039	SEKAR PUTRI LISNANWATI	83	82	80	75
8	21801031040	MOH. ZEFI	83	85	78	75
9	21801031042	AHMAD SYIFAUS SUDUR AL GHOZI	80	85	76	77
10	21801031043	SELLA KURNIA DWI NANDA	85	85	77	75
11	21801031045	RAMA IDRIAS PERMANA	86	84	77	80
12	21801031046	AJI FIKRI LEO KUSWOYO	80	83	79	75
13	21801031047	DIYAN NIVITA SARI	83	83	79	75
14	21801031048	MOH. ABDAL RATHOMI	83	83	78	79
15	21801031050	AHMAD WA'AFIRUL AQLI	80	80	79	79
16	21801031051	M. DENI OKPRIANNOR	85	86	84	83
17	21801031052	LUCKY HANDY ARDIANSYAH	83	82	79	79
18	21801031053	ELSA ROSALIA LARASATI	83	80	80	79
19	21801031054	FEBY SYAHARANI	80	82	80	78
20	21801031055	ERWIN	80	80	80	79
21	21801031056	ARIZA ALIF PRADANA	83	83	79	78
22	21801031057	ZAINAL ABIDIN	86	86	84	84
23	21801031058	INDAH MAULIDIYAH	83	82	79	78
24	21801031059	MUHAMMAD REZA SYAHRUL	81	81	80	80
25	21801031061	SRI RATNA NINGSIH	84	80	79	79
26	21801031062	FENIA AKNANTASARI	85	83	86	84
27	21801031063	MUAZIM	75	73	68	67
28	21801031065	ENDAH NUR CAYANI	83	86	84	85
29	21801031066	SELVYANA MEILANIAN ANGGRAENI	80	80	81	80
30	21801031067	RIAN ADI PRANATA	85	85	77	74
31	21801031069	ADRIAN KURNIAWAN	80	82	79	78
32	21801031070	VAN WIE BRAMASTA CAHYAPUTRA	83	83	78	79
33	21801031071	MOCH. ALI RUSPENDI	80	83	79	76

Class C

No.	NPM	Nama Mahasiswa	SUB-CPMK/BOBOT (NILAI HARIAN)																		Nilai Harian/ Assignment (15%)	Middle Test (30%)	Final Test (30%)	Presence (10%)	Practice (15%)	Final Score		
			1		2		3		4		5		6		7		8		9							Angka	Huruf	
				5%		10%		5%		10%		10%		15%		15%		15%		15%								
1	21601031030	FARIDH ADE MAIZAKUSUMA	70	3.50	75	7.50	70	3.50	67	6.70	70	7.00	68	10.20	69	10.35	69	10.35	70	10.50	70	60	60	100	71	67.09	C	
2	21601031037	FATQUR ROHMAN AFANDI	70	3.50	72	7.20	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	70	10.50	70	10.50	70	60	50	100	55	61.78	C	
3	21601031042	MUHAMMAD YUSRIL IN'AM	72	3.60	73	7.30	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	68	10.20	67	10.05	70	60	50	100	75	64.70	C	
4	21601031061	ABDUL FATTAH	70	3.50	75	7.50	70	3.50	67	6.70	70	7.00	68	10.20	69	10.35	69	10.35	70	10.50	70	60	40	100	73	61.39	C	
5	21801031019	FAKHRURRAZI	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	60	50	100	48	62.13	C	
6	21801031073	M. ABDAN SYAKURO FISYAHRI RHAMADAN	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	80	80	100	86	82.85	A	
7	21801031074	SAHRUL EKA PRASETIA	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	60	40	100	73	62.96	C	
8	21801031075	DWI MULYATININGSIH	80	4.00	85	8.50	85	4.25	85	8.50	80	8.00	79	11.85	79	11.85	75	11.25	79	11.85	80	80	80	100	76	81.41	A	
9	21801031076	JIANE AJENG PRATIWI	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	80	80	100	80	81.93	A	
10	21801031077	AJENG WISTIKA DEWI	85	4.25	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	79	11.85	75	11.25	80	80	80	100	84	82.61	A	
11	21801031078	MUHAMMAD PRAMYODI ERLANGGA	72	3.60	73	7.30	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	68	10.20	67	10.05	70	60	50	100	0	53.45	D	
12	21801031079	RAGIL FATUL MARDILINA	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	83	12.45	80	12.00	80	12.00	80	80	80	100	88	83.27	A	
13	21801031080	NABAUT THORIQ	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	80	12.00	76	11.40	75	11.25	74	11.10	80	60	50	100	75	66.21	C	
14	21801031081	MOH. IMRON ROSIDY	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	65	65	100	44	67.55	C	
15	21801031082	SYAHRUL FIRMANSYAH	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	60	55	100	43	62.99	C	
16	21801031085	SAHIDA REZA WARDANA	85	4.25	87	8.70	85	4.25	86	8.60	86	8.60	85	12.75	85	12.75	82	12.30	83	12.45	85	65	60	100	81	72.35	B	
17	21801031086	MUHIBBATUL LUBABAH	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	80	80	100	83	82.38	A	
18	21801031087	INDAYU DWINKA IRAWAN	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	75	11.25	80	12.00	75	11.25	75	11.25	80	60	40	100	0	51.96	D	
19	21801031088	REZA FACHRUR ROZI	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	60	40	100	0	52.04	D	
20	21801031089	NUR IFFATUS SAHIYAH	86	4.30	86	8.60	85	4.25	86	8.60	85	8.50	84	12.60	83	12.45	84	12.60	84	12.60	85	70	65	100	84	75.78	B	
21	21801031090	PUJI RAHAYU LESTARI	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	70	60	100	85	73.68	B	
22	21801031091	FLORYANT ABBY NOAHFAREL	80	4.00	85	8.50	75	3.75	80	8.00	80	8.00	80	12.00	80	12.00	75	11.25	80	12.00	80	75	75	100	80	78.93	B	
23	21801031092	SAGUSTIAN FUTUHI AHLAA	80	4.00	80	8.00	85	4.25	80	8.00	85	8.50	80	12.00	80	12.00	80	12.00	75	11.25	80	75	75	100	89	80.35	A	
24	21801031093	AHMAD FAQHIL GHUFRON	85	4.25	85	8.50	80	4.00	85	8.50	85	8.50	74	11.10	80	12.00	80	12.00	75	11.25	80	60	40	100	76	63.42	C	
25	21801031094	ARIS	80	4.00	85	8.50	80	4.00	85	8.50	86	8.60	75	11.25	77	11.55	77	11.55	77	11.55	80	70	60	100	74	72.03	B	
26	21801031095	ADINDA WIDYA RAHMAWATI	80	4.00	80	8.00	80	4.00	80	8.00	80	8.00	80	12.00	83	12.45	80	12.00	80	12.00	80	75	75	100	78	78.77	B	
27	21801031096	JUPRIYADI	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	80	12.00	76	11.40	75	11.25	74	11.10	80	70	50	100	70	68.46	C	
28	21801031097	MUNAWIR SAJALI	80	4.00	80	8.00	80	4.00	85	8.50	85	8.50	80	12.00	78	11.70	78	11.70	75	11.25	80	70	50	100	71	68.60	C	
29	21801031099	AHMAD FARIS ROMADHON	70	3.50	72	7.20	70	3.50	70	7.00	70	7.00	70	10.50	70	10.50	70	10.50	70	10.50	70	60	50	100	0	53.53	D	
30	21801031100	FEBRIYANTO	85	4.25	85	8.50	85	4.25	85	8.50	85	8.50	80	12.00	76	11.40	75	11.25	74	11.10	80	60	40	100	43	58.41	C	
31	21801031103	WANDI	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	75	70	100	77	76.98	B	
32	21801031104	HIDAYATUL FIRDA	85	4.25	85	8.50	80	4.00	85	8.50	85	8.50	74	11.10	80	12.00	80	12.00	75	11.25	80	80	80	100	87	83.07	A	
33	21801031105	AISYAH IZZA VIRAHANA	85	4.25	87	8.70	85	4.25	86	8.60	86	8.60	85	12.75	85	12.75	82	12.30	83	12.45	85	80	82	100	82	83.60	A	
34	21801031106	DWI RADITA INDAYANI	80	4.00	80	8.00	80	4.00	80	8.00	81	8.10	79	11.85	78	11.70	80	12.00	79	11.85	80	60	40	100	74	63.03	C	
35	21801031107	NURLAILAH	85	4.25	85	8.50	86	4.30	87	8.70	80	8.00	70	10.50	80	12.00	80	12.00	80	12.00	80	60	40	100	77	63.59	C	
Jumlah Peserta : 35			80.43	4.02	81.57	8.16	80.11	4.01	81.43	8.14	80.97	8.10	76.37	11.46	77.69	11.65	77.03	11.55	76.34	11.45								

% Mahasiswa tidak lulus	11.43
% Mahasiswa nilai A	25.71
% Mahasiswa nilai B	20.00
% Mahasiswa nilai C	42.86

No.	NPM	Nama Mahasiswa	CLO 1	CLO 2	CLO 3	CLO 4
			Score	Score	Score	Score
1	21601031030	FARIDH ADE MAIZAKUSUMA	70	71	69	70
2	21601031037	FATQUR ROHMAN AFANDI	70	71	70	70
3	21601031042	MUHAMMAD YUSRIL IN'AM	71	71	69	67
4	21601031061	ABDUL FATTAH	70	71	69	70
5	21801031019	FAKHRURRAZI	80	85	76	77
6	21801031073	M. ABDAN SYAKURO FISYAHRI RHAMADAN	80	83	79	75
7	21801031074	SAHRUL EKA PRASETIA	86	84	77	80
8	21801031075	DWI MULYATININGSIH	83	83	78	79
9	21801031076	JIANE AJENG PRATIWI	80	80	79	79
10	21801031077	AJENG WISTIKA DEWI	83	83	79	75
11	21801031078	MUHAMMAD PRAMYODI ERLANGGA	71	71	69	67
12	21801031079	RAGIL FATUL MARDILINA	80	80	81	80
13	21801031080	NABAUT THORIQ	85	85	77	74
14	21801031081	MOH. IMRON ROSIDY	80	83	79	75
15	21801031082	SYAHRUL FIRMANSYAH	86	84	77	80
16	21801031085	SAHIDA REZA WARDANA	85	86	84	83
17	21801031086	MUHIBBATUL LUBABAH	80	85	76	77
18	21801031087	INDAYU DWINKA IRAWAN	85	85	77	75
19	21801031088	REZA FACHRUR ROZI	86	84	77	80
20	21801031089	NUR IFFATUS SAHIYAH	86	86	84	84
21	21801031090	PUJI RAHAYU LESTARI	80	80	79	79
22	21801031091	FLORYANT ABBY NOAHFAREL	78	82	78	80
23	21801031092	SAGUSTIAN FUTUHI AHLAA	83	82	80	75
24	21801031093	AHMAD FAQIHIL GHUFRON	83	85	78	75
25	21801031094	ARIS	80	85	76	77
26	21801031095	ADINDA WIDYA RAHMAWATI	80	80	81	80
27	21801031096	JUPRIYADI	85	85	77	74
28	21801031097	MUNAWIR SAJALI	80	83	79	75
29	21801031099	AHMAD FARIS ROMADHON	70	71	70	70
30	21801031100	FEBRIYANTO	85	85	77	74
31	21801031103	WANDI	80	80	79	79
32	21801031104	HIDAYATUL FIRDA	83	85	78	75
33	21801031105	AISYAH IZZA VIRAHANA	85	86	84	83
34	21801031106	DWI RADITA INDAYANI	80	80	79	79
35	21801031107	NURLAILAH	86	84	77	80