



PORTFOLIO

Department of Agrotechnology

Faculty of Agriculture

University of Islam Malang

Subject	Sustainable Agriculture
Module Level, if available	Undergraduate Study Program of Agrotechnology
Subject Code	MKW 60627
Type of course	Applied Science
Credits	3 credits/ 5.1 ECTS
Semester	6
Pre-requisite	Basic of Soil Science
Parallel Class	A, B, and C
Module Description	This course provides students with an in-depth understanding of the characteristics and types of integrated farming techniques based on sustainable farming systems, as well as how to assess the sustainability of an agricultural system. The final ability in this course is that students are expected to be able to master factual knowledge and the latest issues about agro-ecosystem sustainability, besides that students are also expected to be able to implement effective and efficient agro-ecosystem management based on sustainable agricultural systems as good agricultural practices and can recommend best management practices in crop production systems that pay attention to ecological aspects.
Learning Outcomes	Course Learning Outcomes (CLO) CLO 1: Able to develop effective and efficient sustainable farming systems as good agricultural practices CLO 2: Able to design integrated farming techniques as best management practices in plant production systems that pay attention to ecological aspects
Learning Content	After completing this subject students are able to: 1. Master the principles of the agricultural system 2. assess the sustainability of an agricultural system 3. expected to be able to implement effective and efficient agro-ecosystem management based on sustainable agricultural systems as good agricultural practices 4. can recommend best management practices in crop production systems that pay attention to ecological aspects
Aims	Students are able to apply the learning outcomes of the Sustainable Agriculture Course in plant production systems both independently and in the industrial world of the agricultural and plantation sectors
Teaching Methods	Several methods applied in this course consist of lecturing, assignment, and group presentation. All these methods are applied on 3 parallel classes
Participant	<ul style="list-style-type: none"> • A class: 25 students in total; 6th semester = 23 students, and 8th semester = 2 students; • B class: 36 students in total; 6th semester = 34 students, 8th semester = 1 student, and 10th semester = 1 student • C class: 33 students in total; 6th semester = 32 students, and 10th semester = 1 student

Teaching Attendance	14 meetings were completely held (100%) by lecturer and students (A, B, and C classes)
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 matrix and question samples are available in Appendix 1 and Appendix 2
Learning Result	<ul style="list-style-type: none"> • Achievement CLO in A Class CLO 1 = 69,3 (Satisfactory) CLO 2 = 68 (Satisfactory) • Achievement ILO in B Class CLO 1 = 51,74 (Developing) CLO 2 = 60,65 (Excellent) • Achievement ILO in C Class CLO 1 = 58,26 (Developing) CLO 2 = 70,20 (Excellent) <p>Complete achievement on average of CLO can be seen on Appendix 3</p>
Statistical Distribution	<ul style="list-style-type: none"> • A Class, score distribution: A = 16 students (64%), B = 4 students (16%), and C = 5 students (20%) • B Class, score distribution: A = 19 students (53%), B = 4 students (11%), C = 10students (28%) and Failed = 3 students (8%) • C Class, score distribution: A = 19 students (58%), B = 5 students (15%), C = 6students (18%) and Failed = 3 students (9%) <p>Complete achievement on each student can be seen on Appendix 4</p>
Teaching Observation	<p>Materials were delivered in Indonesian. The student could understand the materials well.</p> <ul style="list-style-type: none"> • In A Class: there were 5 students poor on both CLO 1 and 6 students poor on both CLO 2 • In B Class: there were 18 students poor on CLO 1 and 18 students poor on CLO 2 • In C Class: there were 12 students poor on CLO 1 and 9 students poor on CLO 2
Learning Constraints	A, B, and C Class: Lack of practice in the field makes it difficult for students to understand about sustainable agriculture
Recommendation	<ul style="list-style-type: none"> • A Class: Paying more attention for students who hardly understand the materials. • 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. • C Class: 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. Apart from crop cultivation practices on land plots, it is also important to consider the environment in terms of water, biodiversity, and carbon stocks when doing agricultural research. Explain what Sustainable Agriculture is and whether or not it is permissible to utilize chemical inputs in the land in this system? (CLO 1)
2. Agroforestry, horticulture, dairy, sheep and goats, fisheries, poultry, pigeons, biogas, mushrooms, poly-culture, and the utilization of plant by-products are all part of the Integrated Farming System (IFS). Which IFS model can be constructed based on the potential of your place of origin? Explain! (CLO 2)
3. Improper application of N fertilizer and organic matter on agricultural land with steep slopes has the potential to pollute water. Explain the mechanism of N element and organic matter pollution in agricultural landscapes, including what management parameters have the capacity to pollute water. What causes this pollution, and how does it happen? What can be done to prevent pollution like this? (CLO 3)

Appendix 3. Achievement of CLO

A Class

Meetings	CLO 1 (%)	CLO 2 (%)
1	69,5	
2	65	
3	69,5	
4	66	
5-6	76,5	
7, 13		59,5
8-10		71,5
11-12, 14		73
Average	69,3	68
Predicate	SATISFACTORY	SATISFACTORY

B Class

Meetings	CLO 1 (%)	CLO 2 (%)
1	49,31	
2	51,75	
3	51,74	
4	51,04	
5-6	54,86	
7, 13		54,51
8-10		62,50
11-12, 14		64,93
Average	51,74	60,65
Predicate	DEVELOPING	SATISFACTORY

C Class

Meetings	CLO 1 (%)	CLO 2 (%)
1	56,06	
2	56,44	
3	59,71	
4	58,71	
5-6	60,61	
7, 13		62,88
8-10		73,11
11-12, 14		74,62
Average	58,26	70,20
Predicate	DEVELOPING	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

No.	Nomor Induk Mahasiswa	Nama Mahasiswa	SUB-CPMK/ROBOT (NILAI HARIAN)												NILAI HARIAN (Atrigmanat (20%))		Midle Test (20%)	Final Test (20%)	Prase (10%)	Pract ice (30%)	NILAI AKHIR **						
			1		2		3		4		5		6		7						8		ANGKA	HURUF			
			5x	5x	7,5x	5x	12,5x	15x	22,5x	27,5x	Skala 4	Skala 100															
1	2180103005	Nova Ardiansyah	-	-	-	-	-	-	-	-	-	-	-	1,00	0,23	1,00	0,23	0,50	15,50	0	75	100	60	45,50	E		
2	21701031090	Intan Puspa Kartika	-	-	-	-	-	-	-	-	-	-	-	-	-	1,00	0,23	0,50	15,50	0	0	100	60	20,50	E		
3	21801031003	Bhisma vegista putra	3,00	0,15	3,00	0,15	3,00	0,23	3,00	0,15	3,00	0,33	3,00	0,45	3,00	0,63	3,50	0,94	3,74	78,44	72,5	80	100	70	77,19	B	
4	21801031006	Muhammad Fadil	-	-	-	-	1,50	0,11	-	-	-	-	1,50	0,23	1,50	0,34	1,50	0,41	1,09	27,49	75	75	100	65	64,94	C	
5	21801031008	M.khoirurrozikin	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,00	0,33	3,50	0,53	3,50	0,79	3,50	0,96	3,44	85,94	80,5	85	100	78	83,69	A	
6	21801031029	Aulia Mohammad Rahman	-	-	1,00	0,05	1,00	0,05	1,00	0,05	1,00	0,13	1,00	0,15	1,00	0,23	1,00	0,28	0,95	23,75	76,5	0	100	76	55,45	D	
7	21801031038	Khoirun Nadhifah	3,50	0,18	3,50	0,18	3,00	0,23	3,50	0,18	3,00	0,33	3,00	0,45	3,50	0,79	3,50	0,96	3,23	83,43	87,5	83	100	85	86,23	A	
8	21801031039	Sekar Putri Lisnanwati	3,50	0,18	3,50	0,18	3,50	0,26	3,00	0,15	3,00	0,33	3,50	0,53	3,50	0,79	3,50	0,96	3,41	85,31	82,5	85	100	80	87,84	A	
9	21801031040	Moh Zefi	-	-	-	-	1,50	0,11	-	-	2,00	0,25	-	-	1,00	0,23	1,00	0,23	0,36	21,56	72,5	75	100	75	66,21	C	
10	21801031042	Ahmad syifaus sudur al ghozi	-	-	-	-	-	-	2,00	0,10	1,00	0,13	1,00	0,15	1,00	0,23	2,00	0,55	1,15	28,75	72,5	75	100	70	66,25	C	
11	21801031043	Sella Kurnia Dwi Nanda	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	87,5	80	100	60	79,00	B	
12	21801031045	Rama Idrius Permana	-	-	-	-	1,00	0,05	1,50	0,05	1,00	0,13	1,00	0,15	1,00	0,23	1,00	0,28	0,93	23,13	76,5	75	100	76	65,93	C	
13	21801031046	Aji Fikri Leo Kuswoyo	-	-	-	-	-	1,00	0,05	1,00	0,13	1,00	0,15	1,00	0,23	1,00	0,28	0,93	20,63	70,5	80	100	85	69,73	C		
14	21801031047	Diyan Nivita Sari	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	82,5	85	100	80	83,00	A	
15	21801031048	Moh abdirathomi	-	-	-	-	2,00	0,15	-	-	-	-	-	-	1,00	0,23	2,00	0,55	0,93	23,13	70	80	100	68	65,03	C	
16	21801031049	Rofiq Fernando	-	-	-	-	-	-	-	-	1,00	0,13	1,00	0,15	2,00	0,45	1,00	0,23	1,00	25,00	82,5	80	100	78	70,90	B	
17	21801031050	Ahmad Waafirul aqli	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	84,5	80	100	70	81,40	A	
18	21801031051	M.Deni Okpriannor	-	-	-	-	-	-	-	-	-	-	-	-	2,00	0,45	2,00	0,55	1,00	25,00	85	80	100	78	71,40	B	
19	21801031052	LUCKY HANDY ARDIANSYAH	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	84,5	83	100	85	86,50	A	
20	21801031053	Elsa Rosalia L	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	84,5	83	100	85	86,50	A	
21	21801031054	Feby Syaharani	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	85	85	100	90	88,50	A	
22	21801031055	Erwin	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	75	83	100	85	84,60	A	
23	21801031056	Ariza Alif Pradana	3,00	0,15	3,00	0,15	2,00	0,15	2,00	0,10	2,00	0,25	2,00	0,45	3,00	0,79	3,50	0,96	3,00	75,00	87,5	80	100	75	81,00	A	
24	21801031057	zainal abidin	3,00	0,15	3,00	0,15	2,00	0,15	2,00	0,10	2,00	0,25	2,00	0,20	3,00	0,63	3,00	0,83	2,60	65,00	72,5	85	100	80	81,50	A	
25	21801031058	Indah maulidiyah	3,00	0,15	3,00	0,15	2,00	0,15	2,00	0,10	2,00	0,33	2,00	0,30	2,00	0,45	3,50	0,94	2,64	65,94	82,5	83	100	85	81,79	A	
26	21801031059	Muhammad Reza Syahrul	-	-	-	-	-	-	-	-	-	-	-	1,00	0,15	2,00	0,45	2,00	0,55	1,15	28,75	85,5	75	100	60	65,85	C
27	21801031060	Rahmat Samsudin	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	75	85	100	90	86,50	A	
28	21801031061	Sri Ratna Ningsih	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	84,5	85	100	90	89,40	A	
29	21801031062	Fenia Aknantasari	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	87,5	80	100	85	86,50	A	
30	21801031065	Endah Nur Cayani	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	75	85	100	90	86,50	A	
31	21801031066	Selyana Meilianan A	3,50	0,18	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,50	87,50	72,5	80	100	85	83,50	A	
32	21801031067	Rian Adi Pranata	-	-	-	-	-	-	-	-	2,00	0,25	1,00	0,15	1,00	0,23	1,00	0,23	0,90	25,00	75	78	100	70	66,10	C	
33	21801031068	Ade Najib Riswani	-	-	-	-	-	-	-	-	2,00	0,25	1,00	0,15	1,00	0,23	1,00	0,23	1,00	25,00	84,5	80	100	70	68,90	C	
34	21801031069	Adrian Kurniawan	3,50	0,18	3,50	0,18	3,00	0,23	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	3,45	86,94	72,5	85	100	90	89,51	A	
35	21801031070	WAN WIE BRAMASTA	-	-	-	-	-	-	-	-	-	-	-	1,50	0,24	3,00	0,85	0,99	22,19	72,5	78	100	78	67,94	C		
36	21801031071	Moch. Ali Ruspandi	3,00	0,15	3,50	0,18	3,50	0,26	3,50	0,18	3,50	0,44	3,50	0,53	3,50	0,79	3,50	0,96	2,45	86,69	85	80	100	85	85,88	A	
Rata-rata			1,97	0,10	2,07	0,10	2,07	0,16	2,04	0,10	2,19	0,27	2,18	0,33	2,50	0,56	2,60	0,71									
Kawazari Skala 100			49,31	2,47	51,74	2,59	51,74	3,88	51,04	2,55	54,86	6,26	54,51	8,18	62,50	14,06	64,93	17,86									
			51,74								60,65																

No	No Induk Mahasiswa	Nama Mahasiswa	CLO 1 Score	CLO 2 Score
1	2161013005	Nova Ardiansyah	0,00	16,67
2	21701031090	Intan Puspa Kartika	0,00	16,67
3	21801031003	Bhisma vegista putra	75,00	79,17
4	21801031006	Muhammad Fadil	7,50	37,50
5	21801031008	M.khoirurrozikin	85,00	87,50
6	21801031029	Aulia Mohammad Rahman	20,00	25,00
7	21801031038	Khoirun Nadhifah	82,50	83,33
8	21801031039	Sekar Putri Lisnanwati	82,50	87,50
9	21801031040	Moh Zefi	17,50	16,67
10	21801031042	Ahmad syifaus sudur al ghozi	15,00	33,33
11	21801031043	Sella Kurnia Dwi Nanda	87,50	87,50
12	21801031045	Rama Idrius Permana	17,50	25,00
13	21801031046	Aji Fikri Leo Kuswoyo	10,00	25,00
14	21801031047	Diyan Nivita Sari	87,50	87,50
15	21801031048	Moh abdirathomi	10,00	25,00
16	21801031049	Rofiq Fernando	5,00	33,33
17	21801031050	Ahmad Waafirul aqli	87,50	87,50
18	21801031051	M.Deni Okpriannor	0,00	33,33
19	21801031052	LUCKY HANDY ARDIANSYAH	87,50	87,50
20	21801031053	Elsa Rosalia L	87,50	87,50
21	21801031054	Feby Syaharani	87,50	87,50
22	21801031055	Erwin	87,50	87,50
23	21801031056	Ariza Alif Pradana	60,00	83,33
24	21801031057	zainal abidin	60,00	66,67
25	21801031058	Indah maulidiyah	65,00	62,50
26	21801031059	Muhammad Reza Syahrul	0	41,67
27	21801031060	Rahmat Samsudin	87,5	87,50
28	21801031061	Sri Ratna Ningsih	87,5	87,50
29	21801031062	Fenia Aknantasari	87,5	87,50
30	21801031065	Endah Nur Cayani	87,5	87,50
31	21801031066	Selyana Meilianan A	87,5	87,50
32	21801031067	Rian Adi Pranata	10	25,00
33	21801031068	Ade Najib Riswani	20	25,00
34	21801031069	Adrian Kurniawan	85	87,50
35	21801031070	WAN WIE BRAMASTA	0	29,17
36	21801031071	Moch. Ali Ruspandi	85	87,50
			51,736	60,65

**Mahasiswa tidak lulus
 **Mahasiswa nilai A
 **Mahasiswa nilai B
 **Mahasiswa nilai C

