



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

