



BRAWIJAYA UNIVERSITY

FACULTY OF AGRICULTURE

DEPARTMENT OF PLANT PESTS AND DISEASES / MASTER OF AGRICULTURAL ENTOMOLOGY STUDY PROGRAM

SEMESTER COURSE PLAN

COURSES	CODE	CLUSTERS OF COURSES	CREDIT (SKS)	SEMESTER	Date of Preparation
Organic Farming Management	PTH81240	Agricultural Entomology	3 SKS 4.15 ECTS	Odd	June 8, 2021
AUTHORIZATION	Course Developer Lecturer	Course Coordinator	Head of Study Program		
Department of Plant Pests and Diseases	Dr. Ir. Aminudin Afandhi, MS. Dr. Moch. Syamsul Hadi, SP., MP.	Name Signature	Dr. Akhmad Rizali, SP., M.Si. Signature		
Learning Outcomes	ILO STUDY PROGRAM				
	1	Mastering concepts, theories and methods in the field of agricultural entomology			
	2	Have skills in developing the concept of development in agriculture, especially continuous plant pest control.			

	3	Have skills in developing innovations and applications that are tested for problem solving in the community in the field of agricultural entomology in an inter/multidisciplinary manner within the framework of sustainable agriculture.
Course Learning Outcome		
	1	After completing lectures students can develop knowledge about the basic ecology of organic farming.
	2	Students can evaluate certification standards that apply to organic farming, identify and analyze practices used in the management of organic farming systems, plan strategies for conversion to accredited organic management systems, plan and monitor strategies for agricultural management in accordance with organic standards.
Brief Description of Course	This subject discusses the theory (concept, principles, knowledge, synthesis analysis) of organic agriculture and its application theory and the process of organic certification.	
Learning Material / Subject	<ol style="list-style-type: none"> 1. Introduction 2. Ecological systems 3. Organic farming standards (organic quality assurance system in Indonesia) 4. Properties and biological processes of soil 5. Physical and chemical properties and processes of soil 6. Soil organic matter management 7. Planting planning and organic farm management 8. Nutrition management 9. Water management 10. Pest and disease management 11. Weed management 12. Organic crop ecosystem management 13. Conversion to organic farming 14. Certification 	

Relationship of CLO and ILO	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>CLO 1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>ILO 1</td> <td>2</td> <td>5</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLO 2</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>ILO 2</td> <td>2</td> <td>2</td> <td></td> <td>2</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td></td> <td>5</td> <td>5</td> <td></td> <td>5</td> <td>5</td> <td></td> <td></td> </tr> </table>															CLO 1	0	0	0	0	0	0	0	ILO 1	2	5	2					CLO 2	0	0	0	0	0	0	0	ILO 2	2	2		2	2				5	5		5	5		
CLO 1	0	0	0	0	0	0	0																																																
ILO 1	2	5	2																																																				
CLO 2	0	0	0	0	0	0	0																																																
ILO 2	2	2		2	2																																																		
	5	5		5	5																																																		
Reference	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">Main</td> <td></td> </tr> <tr> <td></td> <td> <ol style="list-style-type: none"> 1. SNI 2016 Organic Food 2. Lockeretz W. 2007. Organic Farming: An International History. CABI 3. Nandwani D. 2016. Organic Farming for Sustainable Agriculture. Springer 4. Meena SV, Meena SK, Rakshit A, Stanley J, Rao S. 2021. Advances in Organic Farming: Agronomic Soil Management Practices. Elsevier </td> </tr> <tr> <td>Supporting references</td> <td></td> </tr> <tr> <td></td> <td> <ol style="list-style-type: none"> 1) Jauharlina J, Husni H, Halimursyadah H, Rizali A, Febrian TA. 2021. Diversity of ants (Hymenoptera: Formicidae) in organic and conventional Arabica coffee plantations in Aceh Tengah Regency, Sumatra, Indonesia. IOP Conference Series: Earth and Environmental Science 667 (1) : 012036. 2) Tarno H, Setiawan Y, Putri RAA, Nardo A, Tsamarah FG, Asri J, Wang J. 2022. Effect of Pine Forest Management on the Diversity of Ambrosia Beetles (Curculionidae: Platypodinae and Scolytinae) in East Java, Indonesia. Diversity 14(6): 484. </td> </tr> </table>							Main			<ol style="list-style-type: none"> 1. SNI 2016 Organic Food 2. Lockeretz W. 2007. Organic Farming: An International History. CABI 3. Nandwani D. 2016. Organic Farming for Sustainable Agriculture. Springer 4. Meena SV, Meena SK, Rakshit A, Stanley J, Rao S. 2021. Advances in Organic Farming: Agronomic Soil Management Practices. Elsevier 	Supporting references			<ol style="list-style-type: none"> 1) Jauharlina J, Husni H, Halimursyadah H, Rizali A, Febrian TA. 2021. Diversity of ants (Hymenoptera: Formicidae) in organic and conventional Arabica coffee plantations in Aceh Tengah Regency, Sumatra, Indonesia. IOP Conference Series: Earth and Environmental Science 667 (1) : 012036. 2) Tarno H, Setiawan Y, Putri RAA, Nardo A, Tsamarah FG, Asri J, Wang J. 2022. Effect of Pine Forest Management on the Diversity of Ambrosia Beetles (Curculionidae: Platypodinae and Scolytinae) in East Java, Indonesia. Diversity 14(6): 484. 																																								
Main																																																							
	<ol style="list-style-type: none"> 1. SNI 2016 Organic Food 2. Lockeretz W. 2007. Organic Farming: An International History. CABI 3. Nandwani D. 2016. Organic Farming for Sustainable Agriculture. Springer 4. Meena SV, Meena SK, Rakshit A, Stanley J, Rao S. 2021. Advances in Organic Farming: Agronomic Soil Management Practices. Elsevier 																																																						
Supporting references																																																							
	<ol style="list-style-type: none"> 1) Jauharlina J, Husni H, Halimursyadah H, Rizali A, Febrian TA. 2021. Diversity of ants (Hymenoptera: Formicidae) in organic and conventional Arabica coffee plantations in Aceh Tengah Regency, Sumatra, Indonesia. IOP Conference Series: Earth and Environmental Science 667 (1) : 012036. 2) Tarno H, Setiawan Y, Putri RAA, Nardo A, Tsamarah FG, Asri J, Wang J. 2022. Effect of Pine Forest Management on the Diversity of Ambrosia Beetles (Curculionidae: Platypodinae and Scolytinae) in East Java, Indonesia. Diversity 14(6): 484. 																																																						

	3) Rizali A, Himawan T, Yuniasari N, Yuliastanti N, Bachtiar MA, Rafid EDR. 2022. Contribution of agricultural landscape composition on shaping the interaction between pests and natural enemies in cacao agroforestry. AGRIVITA, Journal of Agricultural Science 44(3): 479-489.	
Learning Media	Software:	Hardware:
		Computer, LCD
Team Teaching	Dr. Ir. Aminudin Afandhi, MS. Dr. Moch. Syamsul Hadi, SP., MP.	
Required Courses	-	

Week	Sub-CLO (as expected final capability)	Indicators	Criteria & Forms of Assessment	Learning Methods (Lectures / Assignments / other forms of learning)	Time (Duration)	Learning Materials / [References]	Proportion (%)
1	Students are able to develop knowledge and concepts of organic agricultural ecology	Ability to master an understanding of the definition, philosophy, concepts and ecological basis	Criteria: The ability of students to develop understanding,	Lectures and discussions Self-task	100 minutes	Introduction Definition, philosophy, concept and	5 %

		of organic agriculture	understanding, and Ecology-Based Organic Agriculture Management in Indonesia Form of Assessment: Participatory Activities		Quiz and Task 1 (2x60 minutes):	ecological basis of organic agriculture	
2	Students are able to develop thoughts about Ecological Systems are: 1. Agriculture as an ecological system 2. Soil Health as a basis for organic production	Ability to master understanding of Agriculture as a system of Ecology and Soil Health as a basis for organic production and carrying out tasks	Criteria: Students' ability to develop thinking 1. Agriculture as an ecological system 2. Soil Health as a basis for organic production Form of Assessment:	Lectures and discussions Self-task	100 minutes Self-study (2x60 minutes)	Ecological Systems 1. Agriculture as an ecological system 2. Soil Health as a basis for organic production	5%

			Participatory Activities				
3	Students are able to analyze the differences in organic farming standards in Indonesia and several countries in the world.	Ability to analyze differences in organic farming standards in Indonesia and several countries in the world. carry out tasks	Criteria: Ability to analyze Organic Standards in Indonesia and Organic Standards from Several Countries in the World Form of assessment: Task: Review scientific papers related to differences in Organic Standards in Indonesia and Organic Standards from Several Countries in the World	Lectures and discussions Self-study	100 minutes Self-study (2x60 minutes):	Organic Farming Standard: 1. Organic Standards in Indonesia 2. Organic Standards from Several Countries in the World k	5%

4	Students are able to master theories about the interaction of plants and soil (food webs in the soil, biological N fixation, mycorrhiza, the role of organic matter)	Ability to master the understanding of developing food web thinking in soil, biological N fixation, mycorrhiza, the role of organic matter and carrying out tasks	<p>Criteria:</p> <p>Ability to develop thinking Nature and process of Soil Biology: Covering plant and soil interactions (food webs in soil, biological N fixation, mycorrhiza, the role of organic matter)</p> <p>Form of assessment:</p> <p>Task: review scientific papers on plant and soil interactions</p>	<p>Lectures and discussions</p> <p>Self-study</p>	<p>100 minutes</p> <p>Self-study (2x60 minutes):</p>	<p>Properties and processes of Soil Biology:</p> <p>Plant and soil interactions (Food webs in soil, biological N fixation, mycorrhizae, role of organic matter)</p>	5%
5	Students are able to identify, measure and describe soil structure and soil type, nutrients and	master an understanding of distinguishing the physical and chemical	Ability to identify, measure and describe soil structure and soil type, nutrients	Lectures and discussions	100 minutes	Physical and Chemical Properties and processes of Soil: Plant and soil interactions (Soil	5%

	water capacity and availability, the role of organic matter	properties of soil and the interaction between soil and plants as well as carrying out tasks	and water capacity and availability, the role of organic matter Form of assessment: Form of Assessment: Participatory Activities	Self-study Method: Contextual Instruction	Self-study (2x60 minutes):	structure and soil type, nutrients and water capacity and availability, role of organic matter)	
6	Students are able to develop plans in building Soil Organic Matter through an integrated approach	mastering an understanding of how to build Soil Organic Matter through an integrated approach and carry out tasks	Ability to plan strategies to build Soil Organic Matter through an integrated approach Form of assessment: Team-based project: planning in building Soil Organic Matter	Lectures and discussions Self-study Method: Contextual Instruction	100 minutes	Soil Organic Matter Management: Strategies for building Soil Organic Matter through an integrated approach	5%

			through an integrated approach				
7	Students are able to compile planting planning and management of Organic Agriculture by considering various aspects, namely crop rotation, Intercropping, Ground Cover Crops, Plant and animal Associations, Designing planting systems.	Student ability Develop planting planning and management of Organic Farming.	Ability to compile planting planning and management of Organic Agriculture including: Crop rotation, Intercropping, Ground Cover Crops, Plant and animal Associations, Designing planting systems. Form of assessment: Team-based project: planting planning and organic farm management	Lectures and discussions Self-study	100 minutes	Organic Farm planting planning and management: 1. Crop rotation 2. Intercropping 3. Ground Cover Plants 4. Plant–animal Association 5. Designing a cropping system	5%
8	Midterm Exam (UTS)						

9	Students are able to manage or carry out soil nutrition management by utilizing composting processes, Green Manure, Manure Fertilizer, Biofertilizer, and Mineral Fertilizer.	Ability to develop nutrition management	Able to develop thinking about how to manage soil nutrition through: Compost, Green Manure, Manure Fertilizer, Biofertilizer, and Mineral Fertilizer. Form of assessment: Quizzes and assignments	Lectures and discussions Self-study Method: Contextual Instruction	100 minutes	Nutrition Management: 1. Composting 2. Green Manure 3. Manure Manure 4. Biofertilizer 5. Mineral Fertilizers	5%
10	Students are able to develop thinking about groundwater management by maintaining water in the soil, harvesting water, and implementing a drip irrigation system	Ability to develop thinking in water management	Able to develop thinking about how Water Management includes: Keeping water in the soil, Harvesting water, and Drip irrigation systems Form of assessment:	Lectures and discussions Self-study Method: Contextual Instruction	100 minutes	Water Management: 1. Maintaining water in the soil 2. Harvesting water 3. Drip irrigation system	5%

			Quizzes and assignments				
11	Students are able to plan OPT management with a preemptive and monitoring strategy approach, as well as responsive strategies that are in accordance with the rules of organic farming	Ability to plan and arrange pest and plant disease management	<p>Able to develop pest and disease management thinking with preemptive and monitoring strategies, as well as responsive strategies</p> <p>Form of assessment:</p> <p>Team-based project: planning OPT management with a preemptive strategy approach</p>	<p>Lectures and discussions</p> <p>Self-study</p> <p>Method:</p> <p>Contextual Instruction</p>	100 minutes	<p>Pest and Disease Management:</p> <p>1. Preemptive Strategy and monitoring</p> <p>2. Responsive Strategy</p>	5%
12	Students are able to develop thoughts about weed management, especially with Preventive Measures, Biological weed Control, and	Ability to develop thinking in weed management	<p>Able to develop weed management thinking with Preventive Measures, Weed Biological Control, and Mechanical weed control</p>	<p>Lectures and discussions</p> <p>Self-study</p> <p>Method:</p>	100 minutes	<p>Weed Management:</p> <p>1. Preventive Measures</p> <p>2. Weed Biocontrol</p> <p>3. Mechanical control</p>	5%

	mechanical weed control in accordance with the rules of organic farming		Form of assessment: Quizzes and assignments	Contextual Instruction			
13	Students are able to master the theory of Organic Crop ecosystem management consisting of habitat management, conservation and improving the performance of Biological Control	Ability to manage organic planting ecosystems	Able to develop thoughts about Organic Plant Ecosystem Management, namely: habitat management, conservation and improving the performance of Biological Control Form of assessment: Participative Activities: field studies to the location of organic farming centers	Lectures and discussions Self-study Method: Contextual Instruction	100 minutes	Organic Crop Ecosystem Management: 1. Habitat Management 2. Conservation and improvement of Biological Control performance	5%

14	Students are able to compile a Conversion plan to Organic Farming, especially in completing the required documents	Ability to respond to learning materials, participate in learning activities and skills in organizing Conversion to Organic Agriculture and carry out tasks	Able to prepare a Conversion plan to Organic Agriculture and compile the completeness of documents needed for conversion Form of assessment: Task: Create a planning outline for Conversion to Organic Farming	Lectures and discussions Self-study Method: Contextual Instruction	100 minutes	Conversion to Organic Agriculture which includes: Program Plan, and Completeness of Conversion Documents	5%
15	Students are able to master the theory of certification procedures and completeness of quality system documents and get to know certification bodies in Indonesia and abroad.	Ability to respond to learning materials, participate in learning activities about certification and carry out tasks	Able to deliver various certification bodies in Indonesia and abroad, and able to develop thinking about certification procedures and	Lectures and discussions Self-study	100 minutes	Certification: 1. Get to know Certification Bodies in Indonesia and Abroad 2. Certification and ICS Procedures 3. Completeness of Quality System Documents	5%

			completeness of quality system documents Form of assessment: Assignment: Make a video of the procedure for applying for organic certification				
16	Final Semester Exam (UAS)						