

## Matrixes of Relationship between Modules and Intended Learning Objectives (ILOs) of Agronomy Study Program

### *a. Matrix of Modules – LO Knowledge Competence (KC)*

	<b>LO-KC-1.</b> Mastering the theoretical concepts and being able to develop science and technology for the cultivation of food crops, plantations and horticulture based on local wisdom and resources	<b>LO-KC-2.</b> Mastering the theoretical concepts of plant cultivation problems and being able to manage and solve problems in the field	<b>LO-KC-3.</b> Mastering the theoretical concepts of sustainable and environmentally friendly plant cultivation management	<b>LO-KC-4.</b> Mastering theoretical concepts in the development of appropriate technology that is applicable in the community to increase agricultural production	<b>LO-KC-5.</b> Mastering the theoretical concepts of the latest science and technology development in plant cultivation that can be applied to the community
Pancasila					
Indonesian					
Mathematics	✓				
Botany	✓				
Agrochemicals	✓				
Agroclimatology					
Introduction to agricultural science			✓		
Introduction to agricultural economics					
Fundamentals of management			✓		
Religion					
English					
Civics					
Genetics					✓
Fundamentals of plant physiology		✓			
Fundamentals of agronomy				✓	
Fundamentals of soil science				✓	
Rural sociology				✓	
Plant growth regulator *				✓	
Statistics	✓				
Plant ecology		✓			

Plant physiology			v		
Plant biochemistry					
Weeds science		v			
Fundamentals of seed science and technology	v				
Fundamentals of plant protection		v			
Soil fertility		v			
Experimental design			v		
Plant breeding					v
Annual crops cultivation	v				
Perennial crops cultivation	v				
Horticultural crops cultivation	v				
Plant nutrition		v			
Organic agriculture	v				
Hydroponics *					
Tissue culture *					
Farm management *					
Advanced annual crops cultivation	v		v		
Advanced perennial crops cultivation	v		v		
Vegetable crops cultivation	v				
Fruit crops cultivation	v				
Agricultural machinery and equipment	v				
Weeds control		v			
Plant biotechnology					v
Spice, medicinal and industrial crops cultivation *	v				
Ornamental plants cultivation *					
Irrigation and drainage *		v			
Fertilization and fertilizers technology *		v			
Research methods		v			

Entrepreneurship					
Field study		v			
Advanced plant breeding *					v
Seed production techniques *					
Swamp land agriculture *				v	
Forest crops cultivation *	v				
Landscape architecture *					v
Plant propagation *				v	
Community service program					v
Field practice		v			
Research project					
Seminar					

**b. Matrix of Modules – LO General Skills (GS)**





**c. Matrix of Modules – LO Specific Skills (SS)**

			<b>LO-SS-1.</b> Capable of applying plant cultivation in agricultural systems by utilizing biological resources creatively and innovatively	
			<b>LO-SS-2.</b> Capable of applying and modifying local wisdom by using the latest science and technology to be applied in plant cultivation practices with specific locations	
			<b>LO-SS-3.</b> Capable of conducting plant cultivation practices and collaborating with teams from various scientific backgrounds	
			<b>LO-SS-4.</b> Capable of identifying problems, providing alternative solutions, and making decisions in the cultivation of crops in the agricultural and plantation industrial systems	
			<b>LO-SS-5.</b> Capable of planning and evaluating efficient and effective crop cultivation systems	
Pancasila			<b>LO-SS-6.</b> Capable of recognizing and taking advantage of business opportunities in the field of agricultural cultivation	
Indonesian			<b>LO-SS-7.</b> Capable of accessing resources including capital, labour, and technology to initiate and run a business in the field of plant cultivation	
Mathematics			<b>LO-SS-8.</b> Capable of actualizing creative and innovative ideas related to plant cultivation technology into commercial activities	
Botany			<b>LO-SS-9.</b> Capable of conducting basic research on the development and implementation of plant cultivation science and technology based on scientific methodologies to generate specific plant cultivation ideas or recommendations	
Agrochemicals			<b>LO-SS-10.</b> Capable of writing research results as mentioned above in the form of scientific articles and present them in scientific forums	
Agroclimatology	✓		<b>LO-SS-11.</b> Capable of thinking analytically and synthetically regarding plant cultivation problems and be responsive to the development of related science and technology	✓
Introduction to agricultural science			<b>LO-SS-12.</b> Capable of communicating aspects of plant cultivation in an attractive, efficient, effective and productive manner	
Introduction to agricultural economics			<b>LO-SS-13.</b> Capable of analyzing and evaluating potential barriers to plant cultivation on the sustainability of national biological resources	
Fundamentals of management		✓		
Religion				
English				
Civics				
Genetics		✓		
Fundamentals of plant physiology	✓			
Fundamentals of agronomy		✓		



Ornamental plants cultivation *					v								
Irrigation and drainage *													v
Fertilization and fertilizers technology *								v					
Research methods					v							v	
Entrepreneurship			v	v		v		v					
Field study											v		
Advanced plant breeding *			v										
Seed production techniques *								v					
Swamp land agriculture *													v
Forest crops cultivation *					v								
Landscape architecture *							v						
Plant propagation *											v		
Community service program												v	
Field practice										v			
Research project			v						v	v			
Seminar												v	

**d. Matrix of Modules – LO Attitudes and Values (AV)**

	LO-AV-1. Faithful to God Almighty and capable of actualizing a religious attitude	LO-AV-2. Act as citizens who are proud and love their homeland, have nationalism and are responsible for the State and nation	LO-AV-3. Capable of contributing in improving the quality of life in society, nation and state based on Pancasila	LO-AV-4. Upholding human values based on morals and ethics	LO-AV-5. Capable of collaborating and have social sensitivity and concern for society and the environment	LO-AV-6. Respect the diversity of cultures, views, religions, and beliefs, as well as the opinions	LO-AV-7. Obey the law and discipline in social and state life	LO-AV-8. Capable of internalizing academic values, norms and ethics	LO-AV-9. Capable of internalizing the spirit of independence and struggle	LO-AV-10. Demonstrate a responsible attitude towards work in their area of expertise independently	LO-AV-11. Internalize the spirit of independence, struggle, and entrepreneurship
Pancasila	v	v				v					
Indonesian	v			v							
Mathematics								v			
Botany								v			
Agrochemicals								v			

Agroclimatology											
Introduction to agricultural science								v			
Introduction to agricultural economics					v						v
Fundamentals of management								v	v		
Religion	v					v					
English				v							
Civics			v				v				
Genetics								v			
Fundamentals of plant physiology								v			
Fundamentals of agronomy											
Fundamentals of soil science											
Rural sociology					v		v				
Plant growth regulator *								v			
Statistics								v			
Plant ecology								v			
Plant physiology											
Plant biochemistry								v			
Weeds science								v			
Fundamentals of seed science and technology								v			
Fundamentals of plant protection								v			
Soil fertility								v			
Experimental design								v			
Plant breeding								v			
Annual crops cultivation											
Perennial crops cultivation											
Horticultural crops cultivation											v
Plant nutrition								v			
Organic agriculture								v			
Hydroponics *								v			
Tissue culture *								v			

