

### UNIVERSITAS NEGERI YOGYAKARTA

# FACULTY OF MATHEMATICS AND SCIENCE DEPARTMENT OF BIOLOGY EDUCATION

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#### **Bachelor of Science in Biology**

#### **MODULE HANDBOOK**

Module name:	Laboratory Work in Agroforestry					
Module level, if applicable:	Undergraduate					
Code:	BIM 6171					
Sub-heading,if applicable:	-					
Classes,if applicable:	-					
Semester:	Even					
Module coordinator:	Dr. Ir. Suhartini, MS					
Lecturer(s):	Dr. Ir. Suhartini, MS.					
Language:	Bahasa Indonesia					
Classification within the curriculum:	Elective Course					
Teaching format / class hours	170 minutes to pretest, preparation, practice and report making					
per week during the semester:	per week					
	Total workload is 45,5 hours per semester which consists of					
Work load:	pretest, preparation, practice, report making and response for 16					
	weeks.					
Credit points:	1 SKS (1,5 ECTS)					
Prerequisites course(s):	Ecology and plant physiology-					
Perogram Learning Outcomes:	<ul> <li>4. Comprehensively mastering Biology (core biology) to solve problems in the field of Biology (problem-solving) and to underlie the concepts of related sciences</li> <li>5. the techniques and methodologies in Biology as well as familiar with the equipment used in Biology laboratories in order to get the knowledge of Biology (how we know what we know)</li> <li>6. Being adaptive, creative, innovative in applying the concepts of Biology and other related fields</li> <li>7. Being skillful in applying the techniques used in laboratories and daily life Being skillful in applying the techniques used in laboratories and daily life</li> <li>9. Being able to work and create jobs/being an entrepreneur in the field of Biology</li> <li>10. Having managerial ability to supervise and evaluate workers and optimizing the networks in order to develop professionalism Having managerial ability to supervise and evaluate workers and optimizing the networks in order to develop professionalism</li> <li>11. Possessing scientific skills to support the ability to speak in local, national, and international forums</li> </ul>					
Course Outcomes	After taking this practice, the students have ability to:					

	CO1. recognize several agroforestry systems that exist based on the characteristics and constituent components of agroforestry.  CO2. recognize the interaction of trees with the soil and the									
	surrounding environment.									
	CO3. Classifying agroforestry based on its constituent components									
	CO4. Classifying agroforestry based on its level of complexity									
	CO5. Analyzing agroforestry systems in the backyard									
	CO6. Evaluate the potential economic benefits of an agroforestry									
	system.									
	CO7. Evaluate the ecological benefits of agroforestry systems.  CO8. Present the results of the practicum report as a group									
	Laboratory Work in Aroforestry Identifying agroforestry systems									
	based on their characteristics, complexity and constituent components, tree interaction with the soil and its environment, potential economic benefits from agroforestry systems and									
Content:										
	ecological benefits of agroforestry systems.									
	The final mark will be weight as follow:									
	No	СО	Assessment Object	Assessment Technique	Weight					
Study/examachievements:	1	CO1 to CO8	Observed	Survey, test,	100%					
			attitudes ,	rubrics and						
			knolwedge, and	manuals						
			skills	l Total	100%					
Forms of media:	Real	objects		Total	10070					
Torms or media.			93). An Introduction	to agroforestry. N	etherlands:					
	A. Nair, P.K.R. (1993). An Introduction to agroforestry. Netherlands: Kluwer Academic Publishers.									
	В. '	The Center for	Agroforestry Uni	versity of Missou	ri (tt).					
	Handbook for Agroforestry Planning & Design. Missouri: Michael Gold, Mihaela Cernusca & Michelle Hall, Eds.									
	<ul> <li>C. Martin, F &amp; Sherman, S. (1992). Agroforestry principles. Revised and updated by Dr. Tim Motis, 2007. ECHO Technical Note.</li> <li>D. da Fonseca, G.A.B., Harvey, C.A., Claude Gascon, C., Heraldo L. Vasconcelos, H.L., &amp; Izac, A-M. N. (2004) Agroforestry and Biodiversity Conservation in Tropical Landscapes. London: Island Press</li> </ul>									
Reference:										
	E. Kaonga, M.L. Ed. (2012). Agroforestry for Biodiversity and									
	Ecosystem Services – Science and Practice: Croatia: In Tech. F. Mellink, W., Rao, Y.S., dan McDicken, K.G. (Ed.) (1991).  Agroforestry in asia and the pasific. Bangkok: RAPA Pubication.									
			an Messenger, P.S. (1							
			pengendalian biologis. Jakarta: UI Press.							

## PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
CO1				V			V				
CO2				V			V				
CO3				V	V	V	V				
CO4				V	V	V	V				
CO5				V	V	V	V			V	
CO6				V					V	V	
CO7				V	V	V	V				
CO8											V