



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Biology Undergraduate Study Program**

Document Code

## SEMESTER LEARNING PLAN

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>	<b>SEMESTER</b>	<b>Compilation Date</b>												
Aquatic Biota Cultivation	4620102038	Study Program Elective Courses	T=2 P=0 ECTS=3.18	6	July 17, 2024												
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>		<b>Study Program Coordinator</b>												
	Dr. Tarzan Purnomo, M.Si.		Dr. Tarzan Purnomo, M.Si.		Dr. H. Sunu Kuntjoro, S.Si., M.Si.												
<b>Learning model</b>	Project Based Learning																
<b>Program Learning Outcomes (PLO)</b>	PLO study program that is charged to the course																
	Program Objectives (PO)																
	PLO-PO Matrix																
		P.O															
	<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																
	P.O	Week															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Short Course Description</b>	Study of various types of aquatic biota that can be cultivated to meet food, health, clothing and recreation needs to support human welfare. Lecture presentations are carried out in the form of theoretical and practical studies in the field and laboratory.																
<b>References</b>	<b>Main :</b>																
	1. Fogg, G.E & Brenda, T, 1987. Algae Culture and Phytoplankton Ekology . Wisconsin: The think of Wisconsin Press. 2. Fuad Cholik et al., 2005. AKUAKULTUR tumpuan harapan masa depan bangsa . Jakarta: Masyarakat Perikanan Nusantara (MPN) dan Taman Akuarium Air Tawar TMII.																
	<b>Supporters:</b>																
<b>Supporting lecturer</b>	Prof. Dr. Ir. Dyah Hariani, M.Si. Dr. Tarzan Purnomo, M.Si. Dr. H. Sunu Kuntjoro, S.Si., M.Si.																
<b>Week-</b>	<b>Final abilities of each learning stage (Sub-PO)</b>	<b>Evaluation</b>		<b>Help Learning, Learning methods, Student Assignments, [ Estimated time]</b>		<b>Learning materials [ References ]</b>	<b>Assesment Weight (%)</b>										
		<b>Indicator</b>	<b>Criteria &amp; Form</b>	<b>Offline ( offline )</b>	<b>Online ( online )</b>												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)										

1	Explain the scope of Aquatic Biota Cultivation Technology.	Explain the scope of Aquatic Biota Cultivation Technology. Explain the important role of Aquatic Biota Cultivation Technology in human life	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Participatory Activities	Presentation, discussion 2 X 50			2%
2	Explain the prospects for developing aquatic biota cultivation in Indonesia	a. Explain the prospects for developing aquatic biota cultivation. b. Explain various problems in cultivating aquatic biota which have bright/profitable prospects in the future	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Participatory Activities	Presentation, Discussion 2 X 50			2%
3	Describe the types of aquatic biota that are cultivated	a. Explain the various types of aquatic biota including flora. b. Explain the types of aquatic biota including fauna	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment	Presentation, discussion 2 X 50			3%
4	Identify types of economically valuable aquatic biota.	a. Explain the characteristics of biota with economic value b. Describe a type of aquatic biota with economic value	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50			5%
5	Explain the potential of aquatic biota as bioindicators	a. Explains aspects of indicators in cultivating aquatic biota. b. Explain the important role of aquatic biota as bioindicators	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment, Test	Presentation, discussion 2 X 50			3%
6	Explain the role of aquatic biota as raw materials for health medicines and cosmetics	a. Explain the meaning of aquatic biota for health, medicine, beauty b. Explains ingredients for health/beauty that come from algae, seaweed, fish oil and lotus	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50			3%
7	Explain the role of aquatic biota in controlling pollution.	a. Explain water pollution control. b. Explain the benefits/role of aquatic biota in controlling water pollution.	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50			3%
8	UTS	UTS	<b>Criteria:</b> UTS  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment, Test	UTS 2 X 50			20%

9	Explain the role of aquatic biota in meeting recreational needs.	a. Explain the role of aquatic biota in meeting recreational needs b. Explain the benefits of ornamental fish, coral reefs, lotus and water hyacinth.	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50			3%
10	Explain the prospects for developing algae cultivation.	a. Explain the prospects for the development of algae cultivation. b. Explain the meaning/use of algae in the fields of health, cosmetics, energy sources, food ingredients and various plant fertilizer ingredients.	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50			3%
11	Skilled in carrying out algae cultures in the laboratory	a. Explain the procedure for culturing algae in the laboratory b. Carrying out algae culture in the laboratory.	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	2 X 50 Practical Presentation and discussion			0%
12	Explain the cultivation and business management systems implemented by cultivation business actors.	a. Explain the cultivation system at the object visited b. Explain the cultivation management system applied to the objects visited	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Field Study 2 X 50			5%
13	Explain the procedures for cultivating freshwater biota	1. Explain the procedures for cultivating freshwater biota. - Initial stage - Implementation - Post-harvest 2. Carry out freshwater fish cultivation practices	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	2 X 50 Practical Presentation and discussion			0%
14	Explain the procedures for cultivating brackish water biota	a. Explain the procedures for cultivating brackish water biota. b. Carrying out brackish water fish cultivation practices	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	2 X 50 Practical Presentation and discussion			8%
15	Explain the procedures for cultivating seawater biota. Explain the processing system for cultivating aquatic biota	a. Explain the procedures for cultivating seawater biota. b. Carrying out brackish water fish cultivation practices c. Explain the processing system for fish farming products d. Explain the processing system for seaweed cultivation products e. Explain other results processing systems	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	2 X 50 Practical Presentation and discussion			10%

16			<b>Form of Assessment :</b> Project Results Assessment / Product Assessment, Test				30%
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**Evaluation Percentage Recap: Project Based Learning**

No	Evaluation	Percentage
1.	Participatory Activities	7%
2.	Project Results Assessment / Product Assessment	66.5%
3.	Test	26.5%
		100%

**Notes**

- 1. Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
- 2. The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
- 3. Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- 4. Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
- 5. Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
- 6. Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
- 7. Forms of assessment:** test and non-test.
- 8. Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
- 9. Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
- 10. Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 11. The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
- 12. TM=Face to face, PT=Structured assignments, BM=Independent study.**