

	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Natural Sciences Education Undergraduate Study Program					Document Code	
SEMESTER LEARNING PLAN							
Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Applied Microbiology	8420102098		T=2	P=0	ECTS=3.18	8	July 18, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
			Prof. Dr. Erman, M.Pd.	
Learning model	Case Studies						
Program Learning Outcomes (PLO)	PLO study program that is charged to the course						
	Program Objectives (PO)						
	PLO-PO Matrix						
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">P.O</div>					
Short Course Description	This course discusses the application of microbiology concepts in various aspects of life, including food, industry, health, environment, agriculture and animal husbandry. Lectures are carried out with modeling, presentations, discussions and practicums.						
	References	Main :	<ol style="list-style-type: none"> 1. Durieux, Alain And Jean-Paul Simon. 2002.Applied Microbiology. New York: Kluwer Academic Publishers. 2. Hogg, Stuart. 2013.Essential Microbiology. 2nd Edition. UK: John Wiley & Sons, Ltd. 3. Jay, James M. 2000. Modern Food Microbiology. 6th Edition. Maryland: Aspen Publisher. 4. Okafor, Nduka. 2011.Environmental Microbiology of Aquatic and Waste Systems. New York: Springer. 5. Pepper, I. L., & Gerba, C. P. 2004.Environmental Microbiology: a Laboratory Manual.2nd Edition. New York: Elsevier Academic Press. 6. Talaro, Arthur. 2002FOUNDATIONS in Microbiology 4th Edition. New York : MC Graw Hill Book. 7. Tiwari, R. P., Hoondal, G. S., Tewari, R. 2009. Laboratory Techniques in Microbiology & Biotechnology. India: Abishek Publication. 				
Supporters:							
Supporting lecturer							

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (offline)	Online (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							0%
2							0%
3							0%
4							0%
5							0%
6							0%
7							0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.