

	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
Biophysics	8420103018		T=3	P=0	ECTS=4.77	2	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Mohammad Budiyanto, Wahono Widodo, An Nuril Maulida Fauziah, Aris Rudi Purnomo, Fasih Bintang Ilhami, Dhita Ayu Permata Sari, Dyah Permata Sari		Dr. Mohammad Budiyanto, M.Pd.			Prof. Dr. Erman, M.Pd.	
Learning model	Case Studies						
Program Learning Outcomes (PLO)	PLO study program which 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	Discussion of cross-disciplinary subjects of biology and physics in living creatures and their environment, including the electrical properties of cells, structure and dynamics of biomolecules, environmental biophysics, and methods in biophysics. Lectures are carried out with modeling, presentations and discussions.						
	References	Main :	<ol style="list-style-type: none"> 1. Kappen, Bert. 2008. Introduction to Biophysics, Handout. Radboud University Nijmegen. 2. Nölting Bengt. 2006. Methods in Modern Biophysics. Berlin: Springer. 3. Tuszynski, Jack A., dan Kurzynski, Michal. 2003. Introduction to Molecular Biophysics. London: CRC Press. 4. Waigh, Tom A.. 2007. Applied Biophysics . London: John Wiley and Sons, Ltd. 5. Carl J. Payton and Roger M. Bartlett. 2008. Biomechanical Evaluation of Movement in Sport and Exercise . The British Association of Sport and Exercise Sciences Guideline 6. Duane Knudson. 2019. Fundamentals of Biomechanics . New York: Springer. 7. Lubert, Styer. 2000. Biokomia Vol I Edisi 4. Jakarta: EGC. 8. Hamill, J. & Knutzen, KM. 2003. Biomechanical Basis of Human Movement. Second Edition. Philadelphia: Lippincott Williams & Wilkins 				
	Supporters:	<ol style="list-style-type: none"> 1. FB Ilhami, M Budiyanto. 2023. The Characterization of Salt Level in Mango Fruit Through Principle of Refraction Index. Science Education and Application Journal 2. M Budiyanto, M Yasin. 2017. Cholesterol detection using optical fiber sensor based on intensity modulation. Journal of Physics: Conference Series 					

Supporting lecturer		Dr. Mohammad Budiyanto, S.Pd., M.Pd. Aris Rudi Purnomo, S.Si., M.Pd., M.Sc. Fasih Bintang Ilhami, S.Kep., M.T., Ph.D. Dr. Sapti Puspitarini, S.Si., M.Si.					
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.

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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.