

 UNESA	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Physics Education Undergraduate Study Program					Document Code																																	
SEMESTER LEARNING PLAN																																							
Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																
BASIC PHYSICS PRACTICUM I	8420301170		T=0	P=1	ECTS=1.59	1	July 18, 2024																																
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator																																	
			Mita Anggaryani, M.Pd., Ph.D.																																	
Learning model	Project Based Learning																																						
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>																																					
	PO Matrix at the end of each learning stage (Sub-PO)																																						
	<table border="1" style="margin: 0 auto;"> <tr> <td style="padding: 5px;">P.O</td> <td colspan="16" style="text-align: center; padding: 5px;">Week</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">1</td><td style="padding: 5px;">2</td><td style="padding: 5px;">3</td><td style="padding: 5px;">4</td><td style="padding: 5px;">5</td><td style="padding: 5px;">6</td><td style="padding: 5px;">7</td><td style="padding: 5px;">8</td><td style="padding: 5px;">9</td><td style="padding: 5px;">10</td><td style="padding: 5px;">11</td><td style="padding: 5px;">12</td><td style="padding: 5px;">13</td><td style="padding: 5px;">14</td><td style="padding: 5px;">15</td><td style="padding: 5px;">16</td> </tr> </table>					P.O	Week																	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																							
Short Course Description	<p>The Physics Practicum 1 course is intended to introduce and train students in science practicum related to Basic Physics 1 course material. In this practicum, students will study the introduction of length measuring instruments, force balance, motion and force, gravitational force, projectile motion, mechanical energy in skater systems, Hooke's law, mathematical pendulums, mechanical waves, and ideal gases. Providing practicums is expected to strengthen students' understanding of physical phenomena related to kinematics, dynamics, waves and thermodynamics. After taking this practicum course, students can understand the concepts of mechanics and thermodynamics through the virtual laboratory which is used during practicums during the Covid-19 pandemic. Students are also expected to be able to see the relationship between theory and practice in general.</p>																																						
References	Main :																																						
	<ol style="list-style-type: none"> 1. Putri NP dan Suprpto N. 2019. <i>Buku panduan Praktikum Fisika Dasar 1</i> . Surabaya: Penerbit JDS. Armintage. -. <i>Practical Physic</i> . John Murray. Darmawan BD. 1984. <i>Teori Ketidakpastian Menggunakan S</i> . Bandung: Penerbit ITB. Lilian Mc.Dermott. 2001. <i>Physics by Inquiry</i>. London: Heineman Education Book. M.Nelkon & Parker. 1975. <i>Advance Level Physic, Third Edition</i> . London: Heineman Education Book. Doedjana & Osanu. 1986. <i>Pengukuran dan Alat-Alat Ukur Listrik</i> . Jakarta: PT Pradnya Paratama. Halliday D, Resnick R, WalkerJ. 2013. <i>Fundamental of Physicscs, 10th Edition</i> . USA: Wiley. 																																						
	Supporters:																																						
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Supporting lecturer		Abu Zainuddin, S.Pd., M.Pd. Mukhayyarotin Niswati Rodliyatul Jauhariyah, S.Pd., M.Pd. Arie Realita, M.Si. Dr. Binar Kurnia Prahani, S.Pd., M.Pd.					
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%
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10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
		0%

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.