

		Universitas Negeri Surabaya Vocational Faculty, D4 Civil Engineering Study Program					Document Code																																				
SEMESTER LEARNING PLAN																																											
Courses		CODE		Course Family		Credit Weight		SEMESTER	Compilation Date																																		
Building Materials Science and Practicum		99992240104011				T=2	P=2	ECTS=6.36	1	July 17, 2024																																	
AUTHORIZATION		SP Developer			Course Cluster Coordinator			Study Program Coordinator																																			
				Puguh Novi Prasetyono, S.Pd., M.T.																																			
Learning model	Case Studies																																										
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																										
	Program Objectives (PO)																																										
	PLO-PO Matrix																																										
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	PO Matrix at the end of each learning stage (Sub-PO)																																										
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2" style="width: 50px; height: 30px; vertical-align: middle;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> <td style="width: 20px; text-align: center;">5</td> <td style="width: 20px; text-align: center;">6</td> <td style="width: 20px; text-align: center;">7</td> <td style="width: 20px; text-align: center;">8</td> <td style="width: 20px; text-align: center;">9</td> <td style="width: 20px; text-align: center;">10</td> <td style="width: 20px; text-align: center;">11</td> <td style="width: 20px; text-align: center;">12</td> <td style="width: 20px; text-align: center;">13</td> <td style="width: 20px; text-align: center;">14</td> <td style="width: 20px; text-align: center;">15</td> <td style="width: 20px; text-align: center;">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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Short Course Description	This course contains knowledge of building materials in the form of stone, hydraulic binding materials, wood, metal, floor covering materials, exterior and interior wall materials, frame and ceiling covering materials, frame and roof covering materials, locking and hanging materials, glass, sanitary materials, electrical materials, paint, adhesives, additives using a direct learning model.																																										
References	Main :																																										
	1. Jackson, N. 1978. Civil Engineering Materials. Hongkong: ELB&Macmillan 2. Puslitbang Pemukiman. 1982. Persyaratan Umum Bahan Bangunan di Indonesia. Bandung: Balitbang. PU 3. Singh, G. 1979. Materials of Construction. Delhi: Standard Book Serveice 4. Ringsun, I Nyoman. 2004. Buku Ajar Ilmu Bahan. Surabaya: Unesa University Press 5. Brosur-brosur Produk Bahan Bangunan																																										
	Supporters:																																										
Supporting lecturer	Muhammad Imaduddin, S.T., M.T. Yogie Risdianto, S.T., M.T. Meity Wulandari, S.T., M.T. Berkat Cipta Zega, S.Pd., M.Eng.																																										
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	Students are able to explain the origin and types of natural stone. Practicum: Introduction to materials	1.Explain the circulation of natural stones 2.Explain the types of natural stone 3.Explain the arrangement of stone grains	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answers 6 X 50			0%
2	Students are able to explain the manufacturing process and requirements for bricks, bricks and concrete blocks. Practical: Roofing materials (concrete tiles and soil)	· Explain the process of making bricks and requirements · Explain the process of making bricks and conditions	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
3	Students are able to explain the manufacturing process and requirements for bricks, bricks and concrete blocks. Practical: Roofing materials (concrete tiles and soil)	· Explain the process of making bricks and requirements · Explain the process of making bricks and conditions	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
4	Students are able to explain the types of practical hydraulic bonding materials: Specific materials	· Explain the types of lime hydraulic binders · Explain the types of red cement hydraulic binders · Explain the types of gypsum and plaster hydraulic binders · Explain the types of posolan hydraulic binders · Explain the types of hydraulic binders Portland cement and white Portland cement Explain the types of mortar hydraulic binders	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
5	· Students are able to explain the types, properties, classes and defects of wood as a building material. Students are able to explain plywood as a building material. Practicum: Brick and brick materials	· Explain the types, properties, classes and defects of wood as a building material. Explain plywood as a building material	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
6	· Students are able to explain the types, properties, classes and defects of wood as a building material. Students are able to explain plywood as a building material. Practicum: Brick and brick materials	· Explain the types, properties, classes and defects of wood as a building material. Explain plywood as a building material	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
7	Students are able to explain various types of metal as building materials. Practicum: Lime material	· Explain steel as a building material · Explain aluminum as a building material Explain zinc as a building material	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answers Paktikum 6 X 50			0%

8	U.S.S	-	Criteria: -	- 6 X 50			0%
9	· Students can explain various types of floor materials. · Students can explain various types of wall materials. Practical: Floor materials	· Explain the various types of flooring materials. Explain the various types of wall materials. Carry out practical work on flooring materials	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
10	· Students can explain various types of floor materials. · Students can explain various types of wall materials. Practical: Floor materials	· Explain the various types of flooring materials. Explain the various types of wall materials. Carry out practical work on flooring materials	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
11	· Students can explain various types of frame materials and ceiling coverings Students can explain various types of frame materials and roof coverings Practicum: Paving materials	· Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install frame and ceiling covering materials. Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install frame and roof covering materials. Carry out practical work on paving materials	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
12	· Students can explain various types of frame materials and ceiling coverings Students can explain various types of frame materials and roof coverings Practicum: Paving materials	· Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install frame and ceiling covering materials. Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install frame and roof covering materials. Carry out practical work on paving materials	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answersPaktikum 6 X 50			0%
13	· Students can explain various types of frame, door and window materials · Students can explain various types of locking and hanging materials Students can explain various types of glass	· Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install frame, door and window materials · Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install locking and hanging materials. Explain the types, how to make, technical specifications, advantages, disadvantages, and how to install glass	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answers 6 X 50			0%

14	Practical: Conblock material	Carry out block material practicum	Criteria: Perfect score if answered well and correctly	Paktikum 6 X 50			0%
15	· Students can explain various types of sanitary materials · Students can explain various types of electrical materials · Students can explain various types of paint materials · Students can explain various types of adhesives Students can explain various types of additive materials Practicum: Wood materials	· Explain the types, how to make, technical specifications, advantages, disadvantages and how to install sanitary materials · Explain the types, how to make, technical specifications, advantages, disadvantages and how to use paint · Explain the types, how to make, technical specifications, advantages, disadvantages, and how to use adhesives Explain the types, how to make, technical specifications, advantages, disadvantages, and how to use additives Carrying out practical work on wood materials	Criteria: Perfect score if answered well and correctly	Lectures, discussions and questions and answers Paktikum 6 X 50			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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.

