



Universitas Negeri Surabaya
Faculty of Postgraduate School,
Master of Technology and Vocational Education Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																										
Materials Technology	8310102044		T=2	P=0	ECTS=4.48	2	July 18, 2024																																										
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator																																											
			Dr. Ir. Achmad Imam Agung, M.Pd.																																											
Learning model	Project Based Learning																																																
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																																
	Program Objectives (PO)																																																
	PLO-PO Matrix																																																
		<table border="1" style="margin: auto;"> <tr><td style="width: 30px; height: 20px;">P.O</td></tr> </table>						P.O																																									
P.O																																																	
	PO Matrix at the end of each learning stage (Sub-PO)																																																
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 30px; height: 20px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">2</td> <td style="width: 20px; height: 20px;">3</td> <td style="width: 20px; height: 20px;">4</td> <td style="width: 20px; height: 20px;">5</td> <td style="width: 20px; height: 20px;">6</td> <td style="width: 20px; height: 20px;">7</td> <td style="width: 20px; height: 20px;">8</td> <td style="width: 20px; height: 20px;">9</td> <td style="width: 20px; height: 20px;">10</td> <td style="width: 20px; height: 20px;">11</td> <td style="width: 20px; height: 20px;">12</td> <td style="width: 20px; height: 20px;">13</td> <td style="width: 20px; height: 20px;">14</td> <td style="width: 20px; height: 20px;">15</td> <td style="width: 20px; height: 20px;">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	This course contains knowledge of building materials in the form of concrete, steel, stone, wood and additional materials. Testing of concrete, steel, stone and wood materials according to standards. The learning method used is a combination of direct and cooperative learning models																																																
References	Main :																																																
	<ol style="list-style-type: none"> 1. Peter Domone. 2010. Construction Materials. London and New York: Spon Press 2. Anonym. 2013. SNI 2847:2013 Persyaratan Beton Struktural untuk Bangunan Gedung 3. Anonym. 2015. SNI 1729:2015 Spesifikasi untuk bangunan baja struktural 4. Anonym. 2013. SNI 7973:2013 Spesifikasi desain untuk konstruksi kayu 5. Anonym. ASTM Standard. ASTM pengujian material. 6. Anonym. SNI Standard. SNI pengujian material. 																																																
	Supporters:																																																
Supporting lecturer	Arie Wardhono, S.T., M.MT., M.T., Ph.D.																																																
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 understand the lecture material and its weight	Explain the material and weight of the lecture	Criteria: Able to discuss well	Lectures, discussions and questions and answers 2 X 50			0%																																										

2	<p>Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and their constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials. Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials.</p>	<ol style="list-style-type: none"> 1.Explain the properties of concrete and its constituent materials 2.Explains the concrete testing model and its constituent materials 3.Understand the concept of concrete mix design 4.Understand the concept of substitute materials for environmentally friendly concrete 	<p>Criteria: Able to discuss and present assignments well</p>	<p>Lectures, discussions and questions and answers, 2 X 50 presentations</p>			0%
3	<p>Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and their constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials. Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials.</p>	<ol style="list-style-type: none"> 1.Explain the properties of concrete and its constituent materials 2.Explains the concrete testing model and its constituent materials 3.Understand the concept of concrete mix design 4.Understand the concept of substitute materials for environmentally friendly concrete 	<p>Criteria: Able to discuss and present assignments well</p>	<p>Lectures, discussions and questions and answers, 2 X 50 presentations</p>			0%

4	<p>Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and their constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials. Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials.</p>	<ol style="list-style-type: none"> 1.Explain the properties of concrete and its constituent materials 2.Explains the concrete testing model and its constituent materials 3.Understand the concept of concrete mix design 4.Understand the concept of substitute materials for environmentally friendly concrete 	<p>Criteria: Able to discuss and present assignments well</p>	<p>Lectures, discussions and questions and answers, 2 X 50 presentations</p>		0%
5	<p>Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and their constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials. Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials.</p>	<ol style="list-style-type: none"> 1.Explain the properties of concrete and its constituent materials 2.Explains the concrete testing model and its constituent materials 3.Understand the concept of concrete mix design 4.Understand the concept of substitute materials for environmentally friendly concrete 	<p>Criteria: Able to discuss and present assignments well</p>	<p>Lectures, discussions and questions and answers, 2 X 50 presentations</p>		0%

6	Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and their constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials. Students are able to explain the properties of concrete and its constituent materials. Students are able to explain concrete testing models and constituent materials. Students are able to understand the concept of concrete mix design. Students are able to understand the concept of environmentally friendly concrete replacement materials.	<ol style="list-style-type: none"> 1.Explain the properties of concrete and its constituent materials 2.Explains the concrete testing model and its constituent materials 3.Understand the concept of concrete mix design 4.Understand the concept of substitute materials for environmentally friendly concrete 	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
7	Students are able to understand the concept of steel. Students are able to understand the characteristics of steel. Students are able to understand steel as a construction	<ol style="list-style-type: none"> 1.Understand the concept of steel 2.Understand the characteristics of steel 3.Understanding steel as a construction 	Criteria: Able to discuss and make presentations well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
8	Students are able to understand the concept of steel. Students are able to understand the characteristics of steel. Students are able to understand steel as a construction	<ol style="list-style-type: none"> 1.Understand the concept of steel 2.Understand the characteristics of steel 3.Understanding steel as a construction 	Criteria: Able to discuss and make presentations well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
9	Students are able to understand the concept of steel. Students are able to understand the characteristics of steel. Students are able to understand steel as a construction	<ol style="list-style-type: none"> 1.Understand the concept of steel 2.Understand the characteristics of steel 3.Understanding steel as a construction 	Criteria: Able to discuss and make presentations well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
10	Midterm Exam (UTS)	Discussions, presentations and questions and answers	Criteria: Able to present reports well	Presentation 2 X 50			0%
11	Students are able to understand the characteristics of wood. Students are able to understand the properties of wood	<ol style="list-style-type: none"> 1.Understand the characteristics of wood 2.Understand the properties of wood 	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
12	Students are able to understand the characteristics of wood. Students are able to understand the properties of wood	<ol style="list-style-type: none"> 1.Understand the characteristics of wood 2.Understand the properties of wood 	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%

13	Students are able to understand natural stone. Students are able to understand bricks and bricks. Students are able to understand paving blocks	1.Understand the characteristics of natural stone 2.Understand the characteristics of bricks and bricks 3.Understand the characteristics of paving blocks	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
14	Students are able to understand natural stone. Students are able to understand bricks and bricks. Students are able to understand paving blocks	1.Understand the characteristics of natural stone 2.Understand the characteristics of bricks and bricks 3.Understand the characteristics of paving blocks	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
15	Students are able to understand natural stone. Students are able to understand bricks and bricks. Students are able to understand paving blocks	1.Understand the characteristics of natural stone 2.Understand the characteristics of bricks and bricks 3.Understand the characteristics of paving blocks	Criteria: Able to discuss and present assignments well	Lectures, discussions and questions and answers, 2 X 50 presentations			0%
16							0%

Evaluation Percentage Recap: Project Based Learning

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.

