



Universitas Negeri Surabaya
Faculty of Engineering,
Building Engineering Education Undergraduate Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date
Drainage*	8320502020	Compulsory Study Program Subjects	T=2 P=0 ECTS=3.18	5	July 17, 2024
AUTHORIZATION		SP Developer	Course Cluster Coordinator	Study Program Coordinator	
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Learning model Project Based Learning

Program Learning Outcomes (PLO) PLO study program which is charged to the course

Program Objectives (PO)

PO - 1 Able to design and master the theory of low-rise building construction which includes stairs, roofs, formwork, gutter construction, bathrooms, septic tanks, sanitation and partition walls in accordance with predetermined quality standards.

PO - 2 Able to apply decision making in designing low-rise building construction which includes stairs, roofs, formwork, gutter construction, bathrooms, septic tanks, sanitation and partition walls in a professional manner.

PO - 3 Able to evaluate low-rise building construction work which includes stairs, roofs, formwork, gutter construction, bathrooms, septic tanks, sanitation and partition walls in a professional manner.

PLO-PO Matrix

	<table border="1" style="margin: auto;"> <tr><td style="width: 50px; height: 20px;">P.O</td></tr> <tr><td style="width: 50px; height: 20px;">PO-1</td></tr> <tr><td style="width: 50px; height: 20px;">PO-2</td></tr> <tr><td style="width: 50px; height: 20px;">PO-3</td></tr> </table>	P.O	PO-1	PO-2	PO-3
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PO-1					
PO-2					
PO-3					

PO Matrix at the end of each learning stage (Sub-PO)

	<table border="1" style="margin: auto;"> <tr> <th rowspan="2" style="width: 50px;">P.O</th> <th colspan="16">Week</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> <tr> <td>PO-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PO-2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PO-3</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																	PO-2																	PO-3																
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Short Course Description This course provides understanding and mastery of non-storied building construction and low-rise building construction which includes building problems, brick ties, wood connections, doors and windows, foundations, ceilings, floors, stairs, roofs, formwork, construction problems, gutters, bathrooms, septic tanks, sanitation and partition walls. Students' ability to apply theory in the form of working drawings (graphics) is a very important supporting element in this course. Lectures are held through an expository approach in the form of lectures and questions and answers followed by discussion and reflection activities equipped with the use of an LCD, and an inquiry approach, namely partial/structured completion of individual assignments.

References

Main :

1. Benny Puspanoro. 1996. Konstruksi Bangunan Gedung Tidak Bertingkat. Yogyakarta : Universitas Atma Jaya Yogyakarta
2. Benny Puspanoro. 1996. Konstruksi Bangunan Gedung Bertingkat. Yogyakarta : Universitas Atma Jaya Yogyakarta
3. A. Pill. 1983. Ringkasan Ilmu Bangunan bagian a. Jakarta : Erlangga
4. A. Pill. 1983. Ringkasan Ilmu Bangunan bagian b. Jakarta : Erlangga
5. Imam Subarkah. 1980. Konstruksi Bangunan Gedung. Bandung : Idea Dharma Bandung
6. Hendarji. Bangunan Umum Jilid A. Buku Teknik H STAM

Supporters:

Supporting lecturer Drs. Djoni Irianto, M.T.

Week-	Final abilities of each learning stage	Evaluation	Help Learning, Learning methods, Student Assignments, [Estimated time]	Learning materials [References]	Assessment Weight (%)
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	(Sub-PO)	Indicator	Criteria & Form	Offline (offline)	Online (online)	J	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understanding building types, Understanding building parts, Understanding building lines	1.Students are able to: Explain the meaning of building 2.Explain the various types of buildings 3.Explain the various building lines	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, 2 X 50 Discussion Questions and Answers			5%
2	Understand the meaning of foundations, understand the types of foundations, draw foundation plans	1.Students are able to: Define the meaning of foundation 2.Explain the various types of foundations 3.Draw a foundation plan	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
3	Understand the meaning of foundations, understand the types of foundations, draw foundation plans	1.Students are able to: Define the meaning of foundation 2.Explain the various types of foundations 3.Drawing foundation plans	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities, Practice/Performance	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
4	Understand drawing foundations on building structures	Students are able to sketch foundation drawings according to building shape requirements	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			4%
5	Understand the placement of beams and columns	1.Students are able to: Explain the placement of columns 2.Explain the placement of blocks	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			2%
6	Understand the placement of blocks and columns Understand the shapes of walls Understand the conditions for brick bonding Apply various brick bond theories to drawings	1.Students are able to: Explain the placement of columns 2.Explain the placement of blocks 3.Explain the shapes of walls 4.Explain the requirements for bonding bricks 5.Applying various types of brick bond theories to images	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			2%
7	Understand determining the placement of beams and columns. Apply various brick bond theories to drawings	1.Students are able to: Determine the placement of columns 2.Determine the placement of blocks 3.Applying various types of brick bond theories to images	Criteria: Full marks are given if you can complete the assignment correctly within the specified time Form of Assessment : Participatory Activities	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			2%
8	UTS	UTS	Criteria: UTS Form of Assessment : Test	UTS 2 X 50			20%

9	Understand the various forms of stairs	Students are able to describe the various forms of stairs	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
10	Understand the various forms of stairs	Students are able to describe the various forms of stairs	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
11	Understanding things related to arches above door or window frames Applying various types of arches above door or window frames in the drawing Understanding the requirements for wood connections	<ol style="list-style-type: none"> 1.Students are able to explain the requirements for wood connections 2.Describe things related to arches above door or window frames 3.Draw an arc over a door or window frame 	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
12	Understand the various types of doors and windows. Apply the various types of doors and windows in the picture. Understand the requirements for wood connections	<ol style="list-style-type: none"> 1.Students are able to: Explain the various types of doors and windows 2.Draw various doors and windows 3.Understand the requirements for wood joints 	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, 2 X 50 Discussion Questions and Answers			5%
13	Understand matters related to roof frame construction and roof shape	Students are able to explain things related to roof frame construction	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
14	Understand things related to wooden, concrete, steel and galvalum trusses	<ol style="list-style-type: none"> 1.Students are able to: Explain things related to wooden horses 2.Explain things related to concrete trusses 3.Explain things related to steel horses 4.Explain things related to galvalum trusses 5.Drawing of steel and galvalume concrete wooden easels 	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%
15	Understanding the meaning of the ceiling Understanding the function of the ceiling Knowing the types of ceiling covering materials Understanding the ceiling frame Applying the ceiling frame to the picture Knowing the various types of floor coverings/accessories Understanding the floor installation pattern Understanding things related to the floor structure Applying the installation pattern and the floor structure in the picture	<ol style="list-style-type: none"> 1.Students are able to: Explain the meaning of ceiling 2.Explain the function of the ceiling 3.Identify the types of ceiling covering materials 4.Explains the ceiling frame 5.Drawing of the ceiling frame 6.Identify various types of floor coverings/accessories 7.Understand floor installation patterns 8.Explain things related to floor structures 9.Drawing installation patterns and floor structures 	<p>Criteria: Full marks are given if you can complete the assignment correctly within the specified time</p> <p>Form of Assessment : Participatory Activities</p>	Blended learning, using online applications, MPBM, questions and answers, and 2 X 50 discussions			5%

16			Form of Assessment : Test	Test	Test		20%
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Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	57.5%
2.	Practice / Performance	2.5%
3.	Test	40%
		100%

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** 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.
- 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.