



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																																
Bridge Structure	8320502255		T=2 P=0 ECTS=3.18	4	July 18, 2024																																
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator																																	
	Dr. Gde Agus Yudha Prawira Adistana, S.T., M.T.																																	
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																															
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Short Course Description	Bridge concept, bridge types, bridge classification, bridge planning stages, understanding steel bridges, types of steel bridges, bridge loading, bridge vehicle floor planning, girder beam planning, composite bridge planning, bridge pillar planning, bridge foundation planning																																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <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;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> <td style="width: 20px;">5</td> <td style="width: 20px;">6</td> <td style="width: 20px;">7</td> <td style="width: 20px;">8</td> <td style="width: 20px;">9</td> <td style="width: 20px;">10</td> <td style="width: 20px;">11</td> <td style="width: 20px;">12</td> <td style="width: 20px;">13</td> <td style="width: 20px;">14</td> <td style="width: 20px;">15</td> <td style="width: 20px;">16</td> </tr> </table>					P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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References	Main :																																				
	<ol style="list-style-type: none"> 1. Supriyadi, B, 1997, Analisis Struktur Jembatan, Biro Penerbit KMTS FT UGM Yogyakarta. 2. Anonim, 1987, Pedoman Pembebanan Jembatan Jalan Raya, Yayasan Badan Penerbit PU, Jakarta 3. Barker, M.R, A.J, 1997, Design of Highway Bridges: Based on AASHATO LRFD Bridges Design Spesification, John Wiley & Sons, Inc, New York, USA 4. Nawy, E.G. 1996, Prestressed Concrete: Pundamental, Prentice Hall, New Gersy Australia. 																																				
	Supporters:																																				
Supporting lecturer	Dr. Suprpto, S.Pd., M.T. Muhammad Imaduddin, S.T., M.T. Mochamad Firmansyah Sofianto, S.T., M.Sc., M.T.																																				
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	Explain the meaning, types and classification of bridges, as well as the stages of bridge design	<ol style="list-style-type: none"> 1.Explain several bridge concepts 2.Explain the mechanisms of bridge design stages 3.Explain orally the concept of a bridge 4.Explain verbally the mechanisms of bridge design stages 	Criteria: Understanding and presentation of theory	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
2	Explain the types of steel bridges	<ol style="list-style-type: none"> 1.Explain the meaning of a steel bridge 2.Explain the types of steel bridges 3.Explain verbally the meaning of a steel bridge 4.Explain orally the types of steel bridges 	Criteria: Understanding student theory	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
3	Explain the types of loads on bridges	<ol style="list-style-type: none"> 1.Explain the meaning of bridge load 2.Explain the various types of bridge loads 3.Explain the combination of bridge loads 4.Explain verbally the meaning of bridge load 5.Explain verbally the various types of bridge loads 	Criteria: Understanding of bridge design	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
4	Explain the types of loads on bridges	<ol style="list-style-type: none"> 1.Explain the meaning of bridge load 2.Explain the various types of bridge loads 3.Explain the combination of bridge loads 4.Explain verbally the meaning of bridge load 5.Explain verbally the various types of bridge loads 	Criteria: Understanding of bridge design	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%

5	Analyze vehicle floor planning	<ol style="list-style-type: none"> 1.Explain the stages of vehicle floor planning 2.Explain the types of loads acting on the vehicle floor 3.Analyze the moments acting on the vehicle floor 4.Explains the combination of vehicle floor moments 5.Analyzing bridge floor reinforcement planning 6.Explain verbally the stages of planning a bridge floor 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
6	Analyze vehicle floor planning	<ol style="list-style-type: none"> 1.Explain the stages of vehicle floor planning 2.Explain the types of loads acting on the vehicle floor 3.Analyze the moments acting on the vehicle floor 4.Explains the combination of vehicle floor moments 5.Analyzing bridge floor reinforcement planning 6.Explain verbally the stages of planning a bridge floor 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
7	Analyze vehicle floor planning	<ol style="list-style-type: none"> 1.Explain the stages of vehicle floor planning 2.Explain the types of loads acting on the vehicle floor 3.Analyze the moments acting on the vehicle floor 4.Explains the combination of vehicle floor moments 5.Analyzing bridge floor reinforcement planning 6.Explain verbally the stages of planning a bridge floor 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%

8	Completion of Mid-Semester Exams (UTS)			2 X 50			0%
9	Analyzing girder beam planning.	<ol style="list-style-type: none"> 1.Explain the stages of girder beam planning 2.Explain the loading of girder beams 3.Explain the calculation of moments in girder beams 4.Analyzing girder beam strength planning 5.Explain verbally the planning of girder beams 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
10	Analyzing girder beam planning.	<ol style="list-style-type: none"> 1.Explain the stages of girder beam planning 2.Explain the loading of girder beams 3.Explain the calculation of moments in girder beams 4.Analyzing girder beam strength planning 5.Explain verbally the planning of girder beams 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
11	Analyzing composite bridge planning	<ol style="list-style-type: none"> 1.Explain the stages of composite bridge planning 2.Explain the loading of composite bridges 3.Explain the calculation of moments in composite bridges 4.Analyzing composite bridge strength planning 5.Explain orally the planning of a composite bridge 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%

12	Analyzing composite bridge planning	<ol style="list-style-type: none"> 1.Explain the stages of composite bridge planning 2.Explain the loading of composite bridges 3.Explain the calculation of moments in composite bridges 4.Analyzing composite bridge strength planning 5.Explain orally the planning of a composite bridge 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
13	Analyzing bridge pillar planning	<ol style="list-style-type: none"> 1.Explain the stages of planning bridge pillars 2.Explain the loading of bridge pillars 3.Explain the calculation of moments on bridge pillars 4.Analyzing composite bridge strength planning 5.Explain orally the planning of bridge pillars 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
14	Analyzing bridge pillar planning	<ol style="list-style-type: none"> 1.Explain the stages of planning bridge pillars 2.Explain the loading of bridge pillars 3.Explain the calculation of moments on bridge pillars 4.Analyzing composite bridge strength planning 5.Explain orally the planning of bridge pillars 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%

15	Analyzing bridge foundation planning	<ol style="list-style-type: none"> 1.Explain the stages of bridge foundation planning 2.Explain the loading of bridge foundations 3.Explain the calculation of moments in bridge foundations 4.Analyzing bridge foundation strength planning 5.Explain orally the planning of bridge foundations 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			0%
16	Analyzing bridge foundation planning	<ol style="list-style-type: none"> 1.Explain the stages of bridge foundation planning 2.Explain the loading of bridge foundations 3.Explain the calculation of moments in bridge foundations 4.Analyzing bridge foundation strength planning 5.Explain orally the planning of bridge foundations 	Criteria: Understanding of bridge calculations	Collaborative Learning Approach (Lecture, discussion and question and answer) 2 X 50			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.