

 <b>UNESA</b>	<b>Universitas Negeri Surabaya</b> <b>Faculty of Engineering</b> <b>Civil Engineering Undergraduate Study Program</b>	<b>Document Code</b>
---	---	----------------------

## SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Construction Management II	2220102036		T=2	P=0	ECTS=3.18	7	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Yogie Risdianto, S.T., M.T.

<b>Learning model</b>	Case Studies
-----------------------	--------------

<b>Program Learning Outcomes (PLO)</b>	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: 50px; height: 30px;"></td> <td style="width: 100px; text-align: center;">P.O</td> </tr> </table>		P.O																															
	P.O																																	
<b>PO Matrix at the end of each learning stage (Sub-PO)</b>	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 30px; height: 30px;">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	16
	P.O		Week																															
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																		

<b>Short Course Description</b>	This course contains the project planning process which consists of manually preparing a project schedule in the form of a Gantt Chart, Line Diagram, and Network Planning manually or using software (Microsoft Project), followed by project resource planning, and techniques that can be used for control. project costs and time. Learning is carried out using direct teaching methods with a constructivist approach.
---------------------------------	--

<b>References</b>	<b>Main :</b>	
		<ol style="list-style-type: none"> <li>1. Suryanto HS, Mas, Dani Hasan. 2006. Manajemen Proyek II . Surabaya: Unipres Unesa.</li> <li>2. Nugraha Paulus, Natan Ishak, Sutjipto R. 1985. Manajemen Proyek Konstruksi 2 . Surabaya: Kartika Yudha.</li> <li>3. Soeharto Iman. 2001. Manajemen Proyek dari Konseptual Sampai Operasional Jilid 2 . Jakarta: Erlangga.</li> <li>4. Widasanti Irika, Lenggogeni. 2013. Manajemen Konstruksi . Bandung: Remaja Rosdakarya.</li> <li>5. Husen Abrar. 2011. Manajemen Proyek . Yogyakarta: Andi.</li> <li>6. Suhendi Edi. 2009. Panduan Mengelola Proyek dengan Microsoft Office Project . Bandung: Yrama Widya.</li> </ol>
	<b>Supporters:</b>	

<b>Supporting lecturer</b>	Ir. Mas Suryanto H.S., S.T., 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	Students are able to explain the meaning, function, benefits and types of project schedules	- Explain the meaning of project scheduling - Explain the function and benefits of scheduling - Explain the types of scheduling	<b>Criteria:</b> good marks if answered correctly	Expository model 2 X 50			0%
2	Students are able to schedule by visualizing block diagrams and line diagrams	- Explain the advantages and disadvantages of bar charts - Make a simple home project WBS - Make a project schedule with a bar chart Make a project schedule with a line chart	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
3	Students are able to explain the concept of Network Planning Diagrams	- Explain the history of the development of network planning diagrams - Explain the importance of NWP's - Explain the systematics of preparing or principles for preparing NWP's (symbols) Draw network planning diagrams	<b>Criteria:</b> good marks if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
4	Students are able to explain the systematics of scheduling using the CPM method	- Explain critical path terminology - Explain the concepts of ES, EF, LS, LF and float for each activity Explain the concept of critical activities	<b>Criteria:</b> good marks if the answer is correct	Lectures, discussions and questions and answers 2 X 50			0%
5	Students are able to apply scheduling using the CPM method in construction project cases	- Perform forward and backward calculations (Calculate ES, EF, LS, LF and float values for each activity) Identify critical activities	<b>Criteria:</b> The score is correct if answered correctly	Discussion, and questions and answers 2 X 50			0%
6	Students are able to explain the systematics of scheduling using the PERT method	- Explain PERT terminology - Explain the difference between PERT and CPM - Explain scheduling procedures with PERT Explain the concepts of optimistic time, most likely time and pessimistic time	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%

7	Students are able to apply scheduling using the PERT method in construction project cases	- Perform forward and backward calculations - Convert time A, b and m to time Te - Perform critical activity variance calculations - Perform critical activity standard deviation calculations Analyze project completion opportunities using normal distribution tables	<b>Criteria:</b> Good marks if answered correctly	Discussion, and questions and answers 2 X 50			0%
8	UTS	-	<b>Criteria:</b> Good marks if answered correctly	- 2 X 50			0%
9	Students are able to explain scheduling procedures using the precedent diagram method	- Explain the terminology of scheduling with PDM - Explain the advantages of the PDM method compared to CPM - Explain the types of logical relationships in PDM and provide examples on construction projects Explain the benefits of using lag	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
10	Students are able to apply scheduling using the PDM method in construction project cases	- Perform forward and backward calculations using the PDM method - Calculate ES, EF, LS, LF and float values for each activity Identify critical activities	<b>Criteria:</b> Good marks if answered correctly	Discussion, and questions and answers 2 X 50			0%
11	Students are able to schedule using the Microsoft Project application	- Perform forward and backward calculations using the PDM method - Calculate ES, EF, LS, LF and float values for each activity - Identify critical activities - Enter activities into MS project - Enter duration, logical relationships between activities into MS project - Create a custom WBS structure - Perform resource entry into MS project - Format the project calendar	<b>Criteria:</b> Perfect score if answered correctly	Class presentation 2 X 50			0%

12	Students are able to conduct construction labor productivity analysis	<ul style="list-style-type: none"> <li>- Explain the meaning and concept of labor productivity -</li> <li>Explain the variables that influence productivity -</li> <li>Perform productivity calculations based on analytical coefficient numbers</li> <li>Calculate the number of workers from the results of productivity analysis</li> </ul>	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
13	Students are able to allocate resources	<ul style="list-style-type: none"> <li>- Explain the purpose of conducting resource allocation analysis -</li> <li>Explain constraints on resource allocation -</li> <li>Calculate the sum of least squares for leveling unlimited resources -</li> <li>Calculate IPD for leveling limited resources</li> </ul>	<b>Criteria:</b> Good marks if you can answer correctly	Lectures, discussions and questions and answers 2 X 50			0%
14	Students are able to control the costs and time of implementing construction projects	<ul style="list-style-type: none"> <li>- Explain the importance of controlling costs and time</li> <li>- Explain procedures and create an S curve -</li> <li>Monitor construction implementation using an S curve -</li> <li>Explain the description of variance analysis -</li> <li>Make a variance analysis -</li> <li>Explain the meaning of work output value -</li> <li>Explain the concepts of ACWP, BCWP and BCWS -</li> <li>Calculate cost variances (CV) and time variance (SV) -</li> <li>Calculating cost performance index (CPI)</li> <li>Calculating schedule performance index (SPI)</li> </ul>	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers Class presentation 2 X 50			0%

15	Students are able to control the costs and time of implementing construction projects	- Explain the importance of controlling costs and time - Explain procedures and create an S curve - Monitor construction implementation using an S curve - Explain the description of variance analysis - Make a variance analysis - Explain the meaning of work output value - Explain the concepts of ACWP, BCWP and BCWS - Calculate cost variances (CV) and time variance (SV) - Calculating cost performance index (CPI) Calculating schedule performance index (SPI)	<b>Criteria:</b> Good marks if answered correctly	Lectures, discussions and questions and answers Class presentation 2 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.

