

		<b>Universitas Negeri Surabaya</b> <b>Faculty of Engineering</b> <b>Civil Engineering Undergraduate Study Program</b>					<b>Document Code</b>																																		
<b>SEMESTER LEARNING PLAN</b>																																									
<b>Courses</b>		<b>CODE</b>	<b>Course Family</b>		<b>Credit Weight</b>		<b>SEMESTER</b>	<b>Compilation Date</b>																																	
Engineering Economics		2220102012			T=2	P=0	ECTS=3.18	7 July 18, 2024																																	
<b>AUTHORIZATION</b>		<b>SP Developer</b>		<b>Course Cluster Coordinator</b>			<b>Study Program Coordinator</b>																																		
		.....		.....			Yogie Risdianto, S.T., M.T.																																		
<b>Learning model</b>	<b>Case Studies</b>																																								
<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program that is charged to the course</b>																																								
	<b>Program Objectives (PO)</b>																																								
	<b>PLO-PO Matrix</b>																																								
	<table border="1" style="margin: auto;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">P.O</td> <td colspan="16"></td> </tr> </table>									P.O																															
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<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: 10%;"></td> <td rowspan="2" style="width: 10%;"></td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 5%; text-align: center;">1</td> <td style="width: 5%; text-align: center;">2</td> <td style="width: 5%; text-align: center;">3</td> <td style="width: 5%; text-align: center;">4</td> <td style="width: 5%; text-align: center;">5</td> <td style="width: 5%; text-align: center;">6</td> <td style="width: 5%; text-align: center;">7</td> <td style="width: 5%; text-align: center;">8</td> <td style="width: 5%; text-align: center;">9</td> <td style="width: 5%; text-align: center;">10</td> <td style="width: 5%; text-align: center;">11</td> <td style="width: 5%; text-align: center;">12</td> <td style="width: 5%; text-align: center;">13</td> <td style="width: 5%; text-align: center;">14</td> <td style="width: 5%; text-align: center;">15</td> <td style="width: 5%; text-align: center;">16</td> </tr> </table>										Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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<b>Short Course Description</b>	This course contains basic concepts of technical economics and their application in analyzing the feasibility of economic aspects of project investment, which consists of basic concepts of technical economics, interest and interest formulas, time value of money, selection of economic alternatives, net present value (NPV), internal rate of return (IRR), profitability index (PI), payback period (PP), break even point (BEP), benefit cost ratio (B/C), sensitivity and risk analysis. Learning is carried out using direct and cooperative teaching methods with a constructivist approach.																																								
<b>References</b>	<b>Main :</b>																																								
	<ol style="list-style-type: none"> <li>1. Pujawan I Nyoman. 2009. Ekonomi Teknik . Surabaya: Guna Widya.</li> <li>2. Giatman M. 2011. Ekonomi Teknik . Jakarta: Rajagrafindo Persada.</li> <li>3. Soeharto Iman. 2001. Manajemen Proyek dari Konseptual Sampai Operasional Jilid 2 . Jakarta: Erlangga.</li> <li>4. Raharjo Ferianto. 2007. Ekonomi Teknik (Analisis Pengambilan Keputusan ). Yogyakarta: Andi.</li> <li>5. Kuswandi. 2007. Analisis Keekonomian Proyek . Yogyakarta: Andi.</li> <li>6. Puerbo Hartono. 1993. Tekno Ekonomi Bangunan Bertingkat Banyak . Jakarta: Djambatan.</li> <li>7. Journal of Management in Engineering (ASCE)</li> </ol>																																								
	<b>Supporters:</b>																																								
<b>Supporting lecturer</b>	Ir. Mas Suryanto H.S., S.T., M.T.																																								
<b>Week-</b>	<b>Final abilities of each learning stage (Sub-PO)</b>	<b>Evaluation</b>		<b>Help Learning, Learning methods, Student Assignments, [ Estimated time ]</b>		<b>Learning materials [ References ]</b>	<b>Assessment Weight (%)</b>																																		
		<b>Indicator</b>	<b>Criteria &amp; Form</b>	<b>Offline ( offline )</b>	<b>Online ( online )</b>																																				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																																		

1	Understand the basic concepts of technical economics in project investment analysis	Can mention and explain decision-making steps in project investment analysis	<b>Criteria:</b> Perfect score if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
2	Understand the components of production costs	Can mention the components of production costs	<b>Criteria:</b> Perfect score if answered correctly	Lectures, discussions and questions and answers 2 X 50			0%
3	Understand the meaning and calculation of interest	Can calculate simple, compound, nominal and effective interest	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
4	Drawing investment cash flow	Can draw investment cash flow diagrams	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
5	Carrying out the equivalent of the value of money against time	Can carry out the equivalent of the value of money against time	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
6	Carrying out the equivalent of the value of money against time	Can carry out the equivalent of the value of money against time	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
7	Carrying out the equivalent of the value of money against time	Can carry out the equivalent of the value of money against time	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
8	UTS	-	<b>Criteria:</b> -	- 2 X 50			0%
9	Perform depreciation calculations for investment analysis	Can perform depreciation calculations for investment analysis	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
10	Perform depreciation calculations for investment analysis	Can perform depreciation calculations for investment analysis	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
11	Calculate the economic feasibility analysis of project investment	Can calculate the economic feasibility of project investment using various methods	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%
12	Calculate the economic feasibility analysis of project investment	Can calculate the economic feasibility of project investment using various methods	<b>Criteria:</b> Perfect score if answered correctly	Lecture, practice questions 2 X 50			0%

13	Understand the economic feasibility analysis of investment in building projects, roads and bridges, and water structures	Can present the results of an analysis of the economic feasibility of investing in building projects, roads and bridges, and water structures	<b>Criteria:</b> Perfect score if answered correctly	Presentation, group discussion 2 X 50			0%
14	Understand the economic feasibility analysis of investment in building projects, roads and bridges, and water structures	Can present the results of an analysis of the economic feasibility of investing in building projects, roads and bridges, and water structures	<b>Criteria:</b> Perfect score if answered correctly	Presentation, group discussion 2 X 50			0%
15	Understand the economic feasibility analysis of investment in building projects, roads and bridges, and water structures	Can present the results of an analysis of the economic feasibility of investing in building projects, roads and bridges, and water structures	<b>Criteria:</b> Perfect score if answered correctly	Presentation, group discussion 2 X 50			0%
16							0%

#### Evaluation Percentage Recap: Case Study

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.**

