

		Universitas Negeri Surabaya Faculty of Engineering, Mechanical Engineering Education Undergraduate Study Program					Document Code																																		
SEMESTER LEARNING PLAN																																									
Courses		CODE	Course Family		Credit Weight		SEMESTER	Compilation Date																																	
Machining Engineering		8320302179			T=2	P=0	ECTS=3.18	2 July 17, 2024																																	
AUTHORIZATION		SP Developer		Course Cluster Coordinator		Study Program Coordinator																																			
			Ir. Wahyu Dwi Kurniawan, S.Pd., 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-left: auto; margin-right: auto;"> <tr> <td style="width: 100px; height: 30px;"></td> <td colspan="16" style="text-align: center;">P.O</td> </tr> </table>									P.O																														
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	PO Matrix at the end of each learning stage (Sub-PO)																																								
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2" style="width: 50px; height: 30px;"></td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> <td style="width: 20px; text-align: center;">5</td> <td style="width: 20px; text-align: center;">6</td> <td style="width: 20px; text-align: center;">7</td> <td style="width: 20px; text-align: center;">8</td> <td style="width: 20px; text-align: center;">9</td> <td style="width: 20px; text-align: center;">10</td> <td style="width: 20px; text-align: center;">11</td> <td style="width: 20px; text-align: center;">12</td> <td style="width: 20px; text-align: center;">13</td> <td style="width: 20px; text-align: center;">14</td> <td style="width: 20px; text-align: center;">15</td> <td style="width: 20px; 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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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																									
Short Course Description	This course is an understanding of various types of machine tools, how to operate them, how to plan and analyze work objects that will be processed with machine tools.																																								
References	Main :																																								
	1. [1] Darmodiharjo, Darmaji. 2004. Petunjuk Kerja Mesin Bubut, Sekrap, dan Frais 1. Jakarta: Dikmenjur. 2. [2] Daryanto. 1987. Mesin Pengerjaan Logam. Bandung: Penerbit Tarsito. 3. [3] Krar, S.F., Amand, J.W., Oswald, J.E.St., 1996. Machine Tool Operation, McGraw Hill, USA. 4. [4] Soetardjo. 1990. Mesin-Mesin Perkakas. Surabaya: Unipress IKIP Surabaya.																																								
	Supporters:																																								
Supporting lecturer	Dr. Yunus, M.Pd.																																								
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	Able to understand lathe machine operating procedures	Describe the working principle of a lathe machine. Calculating the shift angle for the tapered turning process. Determining the lathe equipment to work on a job sheet. Identify K3 procedures in operating a lathe machine. Describe lathe machine maintenance	Criteria: 1.a. Compliance with reporting format 2.b. Results of analysis of the articles read 3.c. Conclusions and suggestions are prepared 4.30 5.a. Presence 6.b. Activeness in questions and answers, seriousness in attending lectures 7.20	Lectures, discussions, questions and answers, exercises and assignments 6 X 50			0%
2							0%
3							0%
4	Able to understand milling machine operating procedures	Describe the working principle of a milling machine. Calculating the rotation of the dividing crank for the process of making n-shaped objects and gears. Determining the milling machine equipment to work on a job sheet. Identify K3 procedures in operating milling machines. Describe milling machine maintenance	Criteria: 1.a. Compliance with reporting format 2.b. Results of analysis of the articles read 3.c. Conclusions and suggestions are prepared 4.30 5.a. Presence 6.b. Activeness in questions and answers, seriousness in attending lectures 7.20	Lectures, discussions, questions and answers, exercises and assignments 6 X 50			0%
5							0%
6							0%
7			Criteria: 1.Compliance with the answer key 2.20	2 X 50			0%
8	Able to understand the operating procedures of scrap machines	Describe the working principle of a scrap machine. Determine scrap machine equipment to work on a job sheet. Identify K3 procedures in operating scrap machines. Describe scrap machine maintenance	Criteria: 1.a. Compliance with reporting format 2.b. Results of analysis of the articles read 3.c. Conclusions and suggestions are prepared 4.30 5.a. Presence 6.Activeness in questions and answers, seriousness in 7.20	Lectures, discussions, questions and answers, exercises and assignments 6 X 50			0%
9							0%

10						0%
11	Able to understand grinding machine operating procedures	Describe the working principle of a grinding machine. Determine the grinding machine equipment to work on a job sheet. Identify K3 procedures in operating grinding machines. Describe grinding machine maintenance	Criteria: 1.a. Compliance with reporting format 2.b. Results of analysis of the articles read 3.c. Conclusions and suggestions are prepared 4.30 5.a. Presence 6.b. Activeness in questions and answers, seriousness in attending lectures 7.20	Lectures, discussions, questions and answers, exercises and assignments 6 X 50		0%
12						0%
13						0%
14	Able to understand drilling machine operating procedures	Describe the working principle of a drilling machine. Determine the drilling machine equipment to work on a job sheet. Identify K3 procedures in operating a drilling machine. Describe drilling machine maintenance	Criteria: 1.a. Compliance with reporting format 2.b. Results of analysis of the articles read 3.c. Conclusions and suggestions are prepared 4.30 5.a. Presence 6.b. Activeness in questions and answers, seriousness in attending lectures 7.20	Lectures, discussions, questions and answers, exercises and assignments 6 X 50		0%
15						0%
16			Criteria: 1.Compliance with the answer key 2.30	2 X 50		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** 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.

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.