

 UNESA	Universitas Negeri Surabaya Vocational Faculty, D4 Electrical Engineering Study Program					Document Code																																																																																																				
SEMESTER LEARNING PLAN																																																																																																										
Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																																																																																			
Practical Electrical Circuits	2030502341	Compulsory Study Program Subjects	T=0	P=2	ECTS=3.18	2	January 29, 2024																																																																																																			
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator																																																																																																				
			Mahendra Widyartono, S.T., M.T.																																																																																																				
Learning model	Project Based Learning																																																																																																									
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																																																																																									
	PLO-8	Able to build the performance or quality of a process through testing, measuring work objects, analyzing and interpreting data according to procedures and standards.																																																																																																								
	Program Objectives (PO)																																																																																																									
	PO - 1	Able to operate experimental equipment in electrical circuits.																																																																																																								
	PO - 2	Able to plan solution approaches for RL, RC circuits, analysis of series and parallel RLC circuits, polyphase circuits.																																																																																																								
	PO - 3	Students are able to interact and work together in electrical circuit practical groups																																																																																																								
	PO - 4	Able to be responsible for the results of group work under supervision																																																																																																								
	PLO-PO Matrix																																																																																																									
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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="padding: 5px;">P.O</td> <td colspan="16" style="padding: 5px;">Week</td> </tr> <tr> <td style="padding: 5px;">1</td><td style="padding: 5px;">2</td><td style="padding: 5px;">3</td><td style="padding: 5px;">4</td><td style="padding: 5px;">5</td><td style="padding: 5px;">6</td><td style="padding: 5px;">7</td><td style="padding: 5px;">8</td><td style="padding: 5px;">9</td><td style="padding: 5px;">10</td><td style="padding: 5px;">11</td><td style="padding: 5px;">12</td><td style="padding: 5px;">13</td><td style="padding: 5px;">14</td><td style="padding: 5px;">15</td><td style="padding: 5px;">16</td> </tr> <tr> <td style="padding: 5px;">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 style="padding: 5px;">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 style="padding: 5px;">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> <tr> <td style="padding: 5px;">PO-4</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																	PO-4																
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Short Course Description	In this Electrical Circuit practice, practical work will be carried out regarding: Introduction to Analog Electrical Measuring Instruments, DC Voltage Sources, Operating an Oscilloscope, Ohm's Law and Kirchoff's Law, Series, Parallel and Combination Resistance Relationships, Voltage Dividers, Direct Current Electric Power, Resistor Characteristics, Power Distribution maximum, Bridge Series, Thevenin and Norton Methods, Super Position Method, Triangle Star Transformation, Indirect Resistance Measurement. Apart from the material above, the electrical circuit practicum will also discuss calculating instantaneous values, average values, effective current and voltage values, AC circuit analysis, power triangle, delta to star transformation, reluculation, polyphase, and transient.																																																																																																									
References	Main :																																																																																																									

		1. Budiono Mismail. 1994. Rangkaian Listrik. Malang: UNIPRESS Unibraw 2. Scaum, 1998. Rangkaian Listrik 1. Jakarta : Erlangga 3. Theraja B.I. 1979. Electrical Technology. New Delhi: S Chand & Cendany					
		Supporters:					
Supporting lecturer		Mahendra Widyartono, S.T., M.T. Nur Vidia Laksmi B., S.ST, M.Sc.					
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							0%
2							0%
3							0%
4							0%
5							0%
6							0%
7							0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							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** 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.