



**Universitas Negeri Surabaya**  
**Faculty of Engineering**  
**, Electrical Engineering Education Undergraduate Study**  
**Program**

Document Code

## SEMESTER LEARNING PLAN

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>			<b>SEMESTER</b>	<b>Compilation Date</b>																																
TRANSFORMER	8320102202		T=2	P=0	ECTS=3.18	3	July 17, 2024																																
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>			<b>Study Program Coordinator</b>																																	
	.....		.....			Dr. Nur Kholis, 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																																						
		P.O																																					
<b>Short Course Description</b>	A transformer is an electrical device that is widely used in the electric power and electronics fields. In the electric power sector, transformers are used from power generation centers to homes. Before being transmitted, the voltage produced by the generator kit is increased first using a power transformer with the aim of reducing energy losses that occur when electricity is transmitted. Then, before being used by consumers, the voltage will be reduced again in stages using a distribution transformer, according to its designation, such as the area. industrial, commercial, or residential. Transformers used in households generally have a smaller size, such as those used to adjust the voltage of electrical household equipment to the available power supply. Transformers with an even smaller size are usually used in electronic devices such as radio, television, and so on.																																						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="width: 10%; text-align: center;">P.O</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>							P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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<b>References</b>	<b>Main :</b>																																						
	1. Alstom. 2011. Network Protection & Automatic Guide . Alstom Grid Worldwide Contact Centre <a href="http://www.alstom.com/grid/contactcentre">www.alstom.com/grid/contactcentre</a> . USA. Prih Sumardjati dll. 2008. Teknik Pemanfaatan Tenaga Listrik . Direktorat Pembinaan Sekolah Menengah Kejuruan. Jakarta. PLN-LMK. 2000. Pedoman Umum Instalasi Listrik . Jakarta. Zuhail. 1991. Dasar Tenaga Listrik. Bandung: Press ITB.																																						
	<b>Supporters:</b>																																						
<b>Supporting lecturer</b>	Prof. Dr. Joko, M.Pd., M.T. Fendi Achmad, S.Pd., M.Pd.																																						
<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	Understanding Transformer Practices globally.	Understanding Transformer Practices globally.		Lectures, discussions and questions and answers 2 X 50			0%
2	Understanding Transformer Practices globally.	Understanding Transformer Practices globally.		Lectures, discussions and questions and answers 2 X 50			0%
3	Understand how to test a Transformer without load	Understand how to test a Transformer without load		Lectures, discussions and questions and answers 2 X 50			0%
4	Understand how to test a Transformer without load	Understand how to test a Transformer without load		Lectures, discussions and questions and answers 2 X 50			0%
5	Understand how to test Short Circuit Transformers	Understand how to test Short Circuit Transformers		Discussion, practice, 2 X 50 Test data analysis			0%
6	Understand how to test Short Circuit Transformers	Understand how to test Short Circuit Transformers		Discussion, practice, 2 X 50 Test data analysis			0%
7							0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							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** 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.