



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

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Industrial Electrical System Design Practicum	2020102134		T=2	P=0	ECTS=3.18	6	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
			Dr. Lusia Rakhmawati, S.T., M.T.	
Learning model	Project Based Learning						
Program Learning Outcomes (PLO)	PLO study program that is charged to the course						
	Program Objectives (PO)						
	PLO-PO Matrix						
		P.O					
Short Course Description	Planning and designing electrical systems based on regulations and standards in various buildings. Drawing installations, calculating electrical installation equipment requirements. Planning industrial electricity distribution systems, modeling, simulating and analyzing electrical systems in industry. Selection of equipment adapted to industrial needs and environment, design of safety systems, grounding systems, improvement of power quality due to industrial loads and external disturbances						
	References						
Supporting lecturer	Main :						
	1. Edy Setiawan . 1986. Instalasi Listrik Arus Kuat I . Jakarta: Bina Cipta 2. Zan Schotsman . 1990. Instalasi . Jakarta: Erlangga 3. Trevor Linsley . 2004. Instalasi Listrik Tingkat Lanjut . Jakarta: Erlangga						
	Supporters:						
Dr. Ir. Achmad Imam Agung, 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)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

1	Able to understand the symbols of strong current electrical engineering	- Mention the types of strong current electrical engineering symbols - Explain the technique of drawing strong current electrical engineering symbols Explain the importance of understanding strong current electrical engineering symbols		Presentations, group discussions, case studies and reflections 2 X 50			0%
2	-Draw strong current electrical engineering symbols; -Discuss the symbols for strong current electrical engineering based on the source book.	1.Explain the main terms in lighting installations. 2.Explain the benefits of the main terms in lighting installations.		Presentations, discussions, case studies and reflections 2 X 50			0%
3	Students are able to understand graphic drawings and the implementation of single switches, series switches and sockets (KKB).	- Explain the application of chart drawings and implementation drawings in electrical installations. - Explain the diagrammatic drawing and implementation of single switches, series switches and sockets (KKB).		Presentations, discussions, case studies and reflections 2 X 50			0%
4	- Students are able to understand the configuration of single switches, series switches and sockets. - Students are able to understand the various types of cables and their uses.	- Explain the principles of drawing single switch configurations, series switches and sockets. - Make configuration plans for single switches, series switches and sockets. - Mention the various types of electrical installation cables. - Explain the characteristics and use of electrical installation cables.		Presentations, discussions, case studies and reflections 2 X 50			0%
5	Students are able to plan a single-phase, single-group home lighting installation.	- Explain the basic principles in planning the design of a single-phase, single-group home lighting installation. - Explain the steps in planning the design of a single-phase, single-group home lighting installation. - Create design plans for single-phase, single-group home lighting installations		Presentations, discussions, case studies and reflections 2 X 50			0%

6	Students are able to plan a single-phase, single-group home lighting installation.	- Explain the basic principles in planning the design of a single-phase, single-group home lighting installation. - Explain the steps in planning the design of a single-phase, single-group home lighting installation. - Create design plans for single-phase, single-group home lighting installations		Presentations, discussions, case studies and reflections 2 X 50			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

- 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.
- 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.

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.