	Universitas Negeri Surabaya Vocational Faculty, D4 Electrical Engineering Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Engineering drawings	2030502048		T=2	P=0	ECTS=3.18	1	July 17, 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**
	Program Objectives (PO)
	PLO-PO Matrix

	P.O

PO Matrix at the end of each learning stage (Sub-PO)

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

Short Course Description	Understanding and studying the function and nature of drawing as a technical language, drawing tools, lines and letters, providing measurements, electrical symbols, drawing charts and implementing home lighting installations, planning and drawing IT-based home lighting installations.
References	**Main :**
	1. Moyn Marbun. 1992. Menggambar Teknik Mesin. Bandung: M2S. Edy Setiawan. 1986. Instalasi Listrik Arus Kuat I. Jakarta: Bina Cipta. Supari Muslim, dan Joko (2009). Perencanaan dan Pemasangan Instalasi Listrik. Jakarta: Dit PSMK.
	Supporters:
Supporting lecturer	Dr. Subuh Isnur Haryudo, S.T., M.T. Aditya Chandra Hermawan, S.ST., M.T. Fendi Achmad, S.Pd., 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 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	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, group discussions, case studies and reflections 2 X 50			0%
2	Students are able to understand the main terms used in lighting installations.	- Explain the main terms in lighting installations. Explain the benefits of the main terms in lighting installations.	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	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).	- implementation drawings in electrical installations. - Explain the diagrammatic drawing and implementation of single switches, series switches and sockets (KKB).	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	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	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	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	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%
6	Students are able to plan single-phase, two-group home lighting installations.	- Explain the basic principles in planning the design of a single-phase, two-group home lighting installation. - Explain the steps in planning a single-phase, two-group home lighting installation. - Make plans & drawings for single-phase, two-group home lighting installations	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%

7	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	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight	Presentations, discussions, case studies and reflections 2 X 50			0%
8	UTS			2 X 50			0%
9	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. Students are able to understand the use of single switches, series switches and sockets in electrical installations	- 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	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities (weight 2); 3. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 4. 3. UAS: carried out every semester to measure all indicators (weight 3); 5. 4. Task: carried out on each indicator (weight 3). 6. Student Final Grade: 7. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%

10	- 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. Students are able to understand the electrical installation of simple house buildings	- Make configuration plans for single switches, series switches and sockets. - Mention the various types of electrical installation cables. Explain the characteristics of the electrical installation of a simple house building	**Criteria:** 1.The assessment criteria are carried out by looking at aspects: 2.1. Participation: carried out by observing student activities 3.(weight 2); 4.2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5.3. UAS: carried out every semester to measure all indicators (weight 6.3); 7.4. Task: carried out on each indicator (weight 3). 8.Student Final Grade: 9.Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%
11	- 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. Students are able to understand drawings of building electrical installations.	- 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.	**Criteria:** 1.The assessment criteria are carried out by looking at aspects: 2.1. Participation: carried out by observing student activities 3.(weight 2); 4.2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5.3. UAS: carried out every semester to measure all indicators (weight 6.3); 7.4. Task: carried out on each indicator (weight 3). 8.Student Final Grade: 9.Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%

12	- 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. Students are able to understand drawings of building electrical installations.	- 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.	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities 3. (weight 2); 4. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5. 3. UAS: carried out every semester to measure all indicators (weight 6. 3); 7. 4. Task: carried out on each indicator (weight 3). 8. Student Final Grade: 9. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%
13	- 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. Students are able to understand drawings of building electrical installations.	- 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.	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities 3. (weight 2); 4. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5. 3. UAS: carried out every semester to measure all indicators (weight 6. 3); 7. 4. Task: carried out on each indicator (weight 3). 8. Student Final Grade: 9. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%

14	- 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. Students are able to understand drawings of building electrical installations.	- 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.	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities 3. (weight 2); 4. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5. 3. UAS: carried out every semester to measure all indicators (weight 6. 3); 7. 4. Task: carried out on each indicator (weight 3). 8. Student Final Grade: 9. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			0%
15	- 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. Students are able to understand drawings of building electrical installations.	- 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.	**Criteria:** 1. The assessment criteria are carried out by looking at aspects: 2. 1. Participation: carried out by observing student activities 3. (weight 2); 4. 2. UTS: carried out with an assessment during the middle of the semester (weight 2); 5. 3. UAS: carried out every semester to measure all indicators (weight 6. 3); 7. 4. Task: carried out on each indicator (weight 3). 8. Student Final Grade: 9. Participation Score (2)%2 Lever Score (3)%2 UTS Score (2)%2 UAS Score (3) divided by 10.	Presentations, discussions, case studies and reflections 2 X 50			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.