	Universitas Negeri Surabaya Faculty of Engineering, Building Engineering Education Undergraduate Study Program	**Document Code**

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Building Installation	8320502046		T=2	P=0	ECTS=3.18	5	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Gde Agus Yudha Prawira Adistana, S.T., M.T.

Learning model: Case Studies

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 application of clean water piping installations, dirty water piping, electrical installations and installation planning accompanied by isometric drawings of buildings

References

Main :

1. SoufyanMoh. Noerbambang Dan Takeo Morimura, 2005,Perancangan DanPemeliharaan Sistem Plambing, PT. Pradnya Paramitha, Pusat KomunikasiPublik
2. Poerbo,Hartono, 2002,Bangunan Utilitas,Jakarta: Djambatan
3. Maryono, 2009/2010,Modul Dasar Instalasi Listrik,SMKNEGERI 3 YOGYAKARTA Jl. RW Monginsidi No 2 Yogyakarta 552234. Ing P. J. M van der Meijs, 1983,Fisika Bangunan,JakartaPusat, ERLANGGA,5. Freick Heinz,1980,Ilmu Konstruksi Bangunan,Yogyakarta:Erlangga
4. Puspantoro BeniIGN,1984,Konstruksi Bangunan Gedung,Yogyakarta:Andi Offset
5. DirektoratPSMK,2009,Spektrum SMK, Jakarta:Depdiknas
6. HadiSuyono. 2014.Perancangan InstalasiListrik Pada Blok Pasar Modern dan Apartemen di Gedung Kawasan Pasar TeroaduBlimbing Malang. Malang. Unibraw

Supporters:

Supporting lecturer: KUSNAN
Drs. Djoni Irianto, M.T.

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	Students understand the basics of building installations	Students can explain and understand the basics of building installations	**Criteria:** Perfect score if answered correctly.	Oral questions and answers Group discussion 2 X 50			0%
2	Students understand advanced material about the basics of building installations	Students can explain and understand the basics of building installations	**Criteria:** Perfect score if answered correctly.	Oral questions and answers Group discussion 2 X 50			0%
3	Students understand about planning clean water supply systems	Students are able to explain the planning of a clean water supply system	**Criteria:** Perfect score if answered correctly.	Oral questions and answers Group discussion 2 X 50			0%
4	Students can understand the design of clean water supply systems (continued)	Students are able to explain the planning of a clean water supply system	**Criteria:** Perfect score if answered correctly.	Oral questions and answers Group discussion 2 X 50			0%
5	Students understand the design of clean water supply systems (continued)	Students are able to explain the planning of a clean water supply system	**Criteria:** Perfect Score If Answered Correctly.	Oral questions and answers Group discussion 2 X 50			0%
6	Students understand the design of clean water supply systems (continued)	Students are able to explain the planning of a clean water supply system	**Criteria:** Perfect Score if answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
7	Students understand waste water (dirty water) and vent network planning systems	Students are able to explain the planning system for waste water (sewage) and vent networks	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
8	UTS	-	**Criteria:** -	- 2 X 50			0%
9	Students understand and understand the rainwater drainage system	Students are able to explain the rainwater drainage system	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
10	Students understand the lightning protection system	Students are able to explain and classify lightning protection systems	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
11	Students understand about AC (air conditioner) system planning	Students are able to explain and classify AC system planning	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%

12	Students understand the hot water supply system	Students are able to explain the hot water supply system	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
13	Students understand the hot water supply system (continued)	Students are able to explain the hot water supply system (continued)	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
14	Students know and understand the design of electrical installation systems	Students are able to explain the design of electrical installation systems	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			0%
15	Students understand the design of electrical installation systems (continued)	Students can learn about electrical installation system design (continued)	**Criteria:** Perfect Score If Answered Correctly	Oral questions and answers Group discussion 2 X 50			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** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.