	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**
Electric Drive Control System	2020102203		**T=2**	**P=0**	**ECTS=3.18**	5	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

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	Provides knowledge about how motor drives and motor drive control systems work. The main material discussed includes dc motor dynamics, dc motor settings, induction motor dynamics, induction motor settings, and synchronous motor settings.
References	**Main :**

1. Polka, Dave.Motor and Drive : A Practical Technology Guide.
2. ISA .2003.The Instrumentation, Systems, and Automation Society.
3. DUBEY, Gopal K.1989.Power Semiconductor Controlled Drives.Prentice Hall, Inc.
4. Subrahmanyam Vedam.1996.Electric Drives Concepts & Applications.McGraw 10Hill.

	Supporters:
Supporting lecturer	Endryansyah, S.T., 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 are able to understand the parts of a DC motor, how a DC motor works, types of DC motors and DC motor applications	- Mention the parts of a DC motor - Be able to explain how a DC motor works - Know the application of DC motors in the process industry	**Criteria:** -	Presentations, group discussions, case studies and reflections 2 X 50			0%
2	Students are able to understand the parts of a DC motor, how a DC motor works, types of DC motors and DC motor applications	- Mention the parts of a DC motor - Be able to explain how a DC motor works - Know the application of DC motors in the process industry	**Criteria:** -	Presentations, group discussions, case studies and reflections 2 X 50			0%
3	Students are able to understand the parts of a DC motor, how a DC motor works, types of DC motors and DC motor applications	- Mention the parts of a DC motor - Be able to explain how a DC motor works - Know the application of DC motors in the process industry	**Criteria:** -	Presentations, group discussions, case studies and reflections 2 X 50			0%
4	Students are able to understand the parts of a DC motor, how a DC motor works, types of DC motors and DC motor applications	- Mention the parts of a DC motor - Be able to explain how a DC motor works - Know the application of DC motors in the process industry	**Criteria:** -	Presentations, group discussions, case studies and reflections 2 X 50			0%
5	Students are able to understand the parts of a DC motor, how a DC motor works, types of DC motors and DC motor applications	- Mention the parts of a DC motor - Be able to explain how a DC motor works - Know the application of DC motors in the process industry	**Criteria:** -	Presentations, group discussions, case studies and reflections 2 X 50			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.