	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
Electronic Control Systems	2020103199		T=3	P=0	ECTS=4.77	6	July 18, 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	Students are able to understand problems in digital systems and their implementation.
References	**Main :**
	1. Mada Sanjaya w.S Ph.D.,panduan praktis membuat robot cerdas menggunakan arduino dan matlab.
	Supporters:
Supporting lecturer	Dr. Farid Baskoro, S.T., M.T. Arif Widodo, S.T., M.Sc. L. Endah Cahya Ningrum, 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	Have the ability to describe the development of analog control systems and digital control systems	understand cognitively the classification of control systems	**Criteria:** 1. Assessment Criteria Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	Paper assignments, discussions and presentations 3 X 50			0%
2	has the ability to describe electronic control systems, both analog control systems and digital control systems	Have the ability to explain the topic/title of the selected analog control system and digital control system	**Criteria:** 1. Assessment Criteria Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	giving paper assignments, presentations and discussions 3 X 50			0%
3	has the ability to describe electronic control systems, both analog control systems and digital control systems	Have the ability to explain the topic/title of the selected analog control system and digital control system	**Criteria:** 1. Assessment Criteria Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	giving paper assignments, presentations and discussions 3 X 50			0%
4	has the ability to describe electronic control systems, both analog control systems and digital control systems	Have the ability to explain the topic/title of the selected analog control system and digital control system	**Criteria:** 1. Assessment Criteria Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	giving paper assignments, presentations and discussions 3 X 50			0%
5	has the ability to describe electronic control systems, both analog control systems and digital control systems	Have the ability to explain the topic/title of the selected analog control system and digital control system	**Criteria:** 1. Assessment Criteria Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	giving paper assignments, presentations and discussions 3 X 50			0%
6	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%

7	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%
8	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%
9	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%
10	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%
11	Have competence in describing and creating a series of implementations of analog control systems and digital control systems	topics on analog control systems and digital control systems that can be implemented	**Criteria:** 1. Assessment Criteria: Excellent performance and series trial results = 91-100 2. Both presentation and test series results = 81-90 3. Quite good and series test results = 71 - 80	Tasks and implementation results for each topic of the 3 X 50 electronic control system circuit			0%

12	Have competence in evaluating a series of electronic control system implementations that have been designed, created, tested and analyzed	Understand how to evaluate analog and digital electronic control systems	**Criteria:** 1. Assessment Criteria Very good way of presenting data = 91-100 2. Good presentation of how to present data = 81-90 3. Fairly good way of presenting data = 71 - 80	Tasks and test results 3 X 50			0%
13	Have competence in evaluating a series of electronic control system implementations that have been designed, created, tested and analyzed	Understand how to evaluate analog and digital electronic control systems	**Criteria:** 1. Assessment Criteria Very good way of presenting data = 91-100 2. Good presentation of how to present data = 81-90 3. Fairly good way of presenting data = 71 - 80	Tasks and test results 3 X 50			0%
14	Have competence in evaluating a series of electronic control system implementations that have been designed, created, tested and analyzed	Understand how to evaluate analog and digital electronic control systems	**Criteria:** 1. Assessment Criteria Very good way of presenting data = 91-100 2. Good presentation of how to present data = 81-90 3. Fairly good way of presenting data = 71 - 80	Tasks and test results 3 X 50			0%
15	Have competence in evaluating a series of electronic control system implementations that have been designed, created, tested and analyzed	Understand how to evaluate analog and digital electronic control systems	**Criteria:** 1. Assessment Criteria Very good way of presenting data = 91-100 2. Good presentation of how to present data = 81-90 3. Fairly good way of presenting data = 71 - 80	Tasks and test results 3 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** 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.