

		<p style="text-align: center;">Universitas Negeri Surabaya Faculty of Engineering, Electrical Engineering Undergraduate Study Program</p>					<p style="text-align: center;">Document Code</p>																																										
SEMESTER LEARNING PLAN																																																	
Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																									
Control System Instrumentation Practicum		2020102135		T=2	P=0	ECTS=3.18	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																																																
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 100px; height: 30px;">P.O</td> </tr> </table>							P.O																																								
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	PO Matrix at the end of each learning stage (Sub-PO)																																																
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2" style="width: 30px; height: 30px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> <td style="width: 20px;">5</td> <td style="width: 20px;">6</td> <td style="width: 20px;">7</td> <td style="width: 20px;">8</td> <td style="width: 20px;">9</td> <td style="width: 20px;">10</td> <td style="width: 20px;">11</td> <td style="width: 20px;">12</td> <td style="width: 20px;">13</td> <td style="width: 20px;">14</td> <td style="width: 20px;">15</td> <td style="width: 20px;">16</td> </tr> </table>																P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																	
Short Course Description	Practices on Equipment and Instrumentation Requirements for Control Systems, Positional Resistance Transducers, Wheatstone Bridges, Temperature Measurements, light sensors, Linear or Rotational Motion, Signal Conditioning Amplifiers, signal conversion.																																																
References	Main :																																																
	<ol style="list-style-type: none"> 1. LJ Create.2007. An Introduction to Transducers and Instrumentation. 2. B.A. Gregory.1981. An Introduction to Electrical Instrumenttion and Measurement Systems. London 																																																
	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	Be able to list the basic components of a closed loop system and explain their functions. Able to explain the meaning of terms related to control system equipment.			2 X 50			0%
2	Be able to list the basic components of a closed loop system and explain their functions. Able to explain the meaning of terms related to control system equipment.			2 X 50			0%
3	Able to explain the basic construction of rotary variable resistors and sliders. Able to compare the application of carbon strip variable resistors to wirewound types. Able to explain the characteristics of IC temperature sensors. Able to explain the construction and characteristics of the Platinum RTD resistance transducer.			2 X 50			0%
4	Able to explain the basic construction of rotary variable resistors and sliders. Able to compare the application of carbon strip variable resistors to wirewound types. Able to explain the characteristics of IC temperature sensors. Able to explain the construction and characteristics of the Platinum RTD resistance transducer.			2 X 50			0%
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7	Be able to explain the construction and characteristics of NTC thermistors.			2 X 50			0%
8	Able to solve UTS questions			2 X 50			0%
9	Be able to explain the construction and characteristics of NTC thermistors. Explain the construction and characteristics of photovoltaic cells. Explain the construction and characteristics of phototransistors. Explain the construction and characteristics of photoconductive cells. Explain the construction and characteristics of PIN photodiodes.			2 X 50			0%
10	Be able to explain the construction and characteristics of NTC thermistors. Explain the construction and characteristics of photovoltaic cells. Explain the construction and characteristics of phototransistors. Explain the construction and characteristics of photoconductive cells. Explain the construction and characteristics of PIN photodiodes.			2 X 50			0%
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12	Be able to explain the construction and characteristics of NTC thermistors. Explain the construction and characteristics of photovoltaic cells. Explain the construction and characteristics of phototransistors. Explain the construction and characteristics of photoconductive cells. Explain the construction and characteristics of PIN photodiodes.			2 X 50			0%
13	Be able to explain the construction and characteristics of NTC thermistors. Explain the construction and characteristics of photovoltaic cells. Explain the construction and characteristics of phototransistors. Explain the construction and characteristics of photoconductive cells. Explain the construction and characteristics of PIN photodiodes.			2 X 50			0%
14	Be able to explain the construction and characteristics of NTC thermistors. Explain the construction and characteristics of photovoltaic cells. Explain the construction and characteristics of phototransistors. Explain the construction and characteristics of photoconductive cells. Explain the construction and characteristics of PIN photodiodes.			2 X 50			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** 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.