

		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																																									
Industrial Informatics		2020103043		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																																																
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 50px; text-align: center;">P.O</td> <td colspan="16"></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; text-align: center;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> <td style="width: 20px; text-align: center;">5</td> <td style="width: 20px; text-align: center;">6</td> <td style="width: 20px; text-align: center;">7</td> <td style="width: 20px; text-align: center;">8</td> <td style="width: 20px; text-align: center;">9</td> <td style="width: 20px; text-align: center;">10</td> <td style="width: 20px; text-align: center;">11</td> <td style="width: 20px; text-align: center;">12</td> <td style="width: 20px; text-align: center;">13</td> <td style="width: 20px; text-align: center;">14</td> <td style="width: 20px; text-align: center;">15</td> <td style="width: 20px; text-align: center;">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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Short Course Description	This course explains computer programming and computing techniques in developing electrical systems, control systems, electronic systems and communication systems.																																																
References	Main :																																																
	1. W.A. Halang, K.M. Sacha. Real-time systems : Implementation of industrial computerised process automation. Ed. World Scientific, 1992. T. Boucher, A. Yalcin, Design of Industrial Information Systems, Elsevier, 2006																																																
	Supporters:																																																
Supporting lecturer	Muhamad Syariffuddien Zuhrie, S.Pd., M.T. Widi Aribowo, S.T., M.T. Miftahur Rohman, S.T., M.T. Rifqi Firmansyah, 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	Able to use computer programming and computing techniques in developing electrical systems, control systems, electronic systems and communication systems.	can explain control system computing techniques		3 X 50			0%
2	Able to explain the basic concepts of industrial informatics			3 X 50			0%
3	Able to explain the concept of data communication systems in industry			3 X 50			0%
4	Able to explain the main issues in designing industrial automation systems related to real-time control systems			3 X 50			0%
5	Able to explain the definition, workings and performance of a fieldbus network			3 X 50			0%
6	Able to explain the definition, workings and performance of industrial ethernet networks			3 X 50			0%
7	Able to explain the definition, workings and performance of automotive networks			3 X 50			0%
8	UTS			3 X 50			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** 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.