



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																																										
System Reliability and Safety Engineering	2020102234		T=2	P=0	ECTS=3.18	7	July 18, 2024																																										
AUTHORIZATION		SP Developer	Course Cluster Coordinator			Study Program Coordinator																																											
				Dr. Lusia Rakhmawati, 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)																																																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="width: 10%; text-align: center;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 5%; text-align: center;">1</td> <td style="width: 5%; text-align: center;">2</td> <td style="width: 5%; text-align: center;">3</td> <td style="width: 5%; text-align: center;">4</td> <td style="width: 5%; text-align: center;">5</td> <td style="width: 5%; text-align: center;">6</td> <td style="width: 5%; text-align: center;">7</td> <td style="width: 5%; text-align: center;">8</td> <td style="width: 5%; text-align: center;">9</td> <td style="width: 5%; text-align: center;">10</td> <td style="width: 5%; text-align: center;">11</td> <td style="width: 5%; text-align: center;">12</td> <td style="width: 5%; text-align: center;">13</td> <td style="width: 5%; text-align: center;">14</td> <td style="width: 5%; text-align: center;">15</td> <td style="width: 5%; 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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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																	
Short Course Description	History of reliability systems, objectives, scope and techniques, definitions, basic assessment of constraints, reliability and availability program plans, reliability requirements, reliability culture, human errors, human factors, reliability prediction and improvement, design for reliability: statistics based approach, physics of failure based approach, common tools and techniques., reliability modeling, reliability theory, quantitative system reliability parameters. reliability testing: reliability test requirements, accelerated testing, software reliability, comparison to safety engineering: fault tolerance, basic reliability, detectability and common cause failures. operational reliability assessment, organization, education.																																																
References	Main :																																																
	1. 1. Reliability and availability System																																																
	Supporters:																																																
Supporting lecturer	Muhamad Syariffuddien Zuhrie, S.Pd., M.T. Roswina Dianawati, S.Pd., M.Ed.																																																
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 can explain the concept and definition of system reliability and availability	can explain the concept and definition of reliability and availability	Criteria: 1. Very good performance = 91-100 2. Good presentation = 81-90 3. Fairly good = 71 - 80	Presentations, discussions. 2 X 50			0%																																										

2	Students can explain the concept and definition of system reliability and availability	can explain the concept and definition of reliability and availability	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	Presentations, discussions. 2 X 50			0%
3	Students have the ability to describe: basic reliability assessment, reliability and availability of program plans	Students master descriptively about: basic assessment of obstacles, reliability and availability of program plans	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	Presentation and discussion 2 X 50			0%
4	Students have the ability to describe: basic reliability assessment, reliability and availability of program plans	Students master descriptively about: basic assessment of obstacles, reliability and availability of program plans	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	Presentation and discussion 2 X 50			0%
5	Have competence in explaining and describing: reliability requirements, reliability culture, human errors, human factors, reliability prediction and improvement	Can explain to other people about: reliability requirements, reliability culture, human errors, human factors, reliability prediction and improvement	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	Reading, making papers for study materials, presentations and discussion results 2 X 50			0%
6	have competence in explaining and describing: design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory,	can explain design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory,	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	paper, discussion and discussion results 2 X 50			0%
7	Have competence in explaining and describing: design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory,	can explain design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory,	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	paper, discussion and discussion results 2 X 50			0%
8	Have competence in explaining and describing: design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory	can explain design for reliability: statistics based approach, physics of failure based approach, common tools and techniques, reliability modeling, reliability theory	Criteria: 1.Very good performance = 91-100 2.Good presentation = 81-90 3.Fairly good = 71 - 80	paper, discussion and discussion results 2 X 50			0%

9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							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.**