	Universitas Negeri Surabaya Faculty of Engineering, Mechanical Engineering Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Material Testing	2120102059		T=2	P=0	ECTS=3.18	4	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Ir. Priyo Heru Adiwibowo, 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)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description: This course studies destructive testing including tensile testing, hardness, metallography, notch, bending, compression and non-destructive testing which includes testing coating thickness, surface roughness, magnetography, radiography, dye penetrant and fluorescein.

References

Main :

1. [1] Suherman, W. 1999. Pengujian Bahan. Penerbit ITS: Surabaya
2. [2] Callister, William D. 2003. Material Science and Engineering An Introduction. Sixth Edition. Jhon Wiley & Sons, Inc: USA
3. [3] Smith, William F. Hashemi, Javad. 2006. Foundations of Material Science and Engineering. Fourth Edition. Mc-Graw-Hill Companies, Inc: New York
4. [4] Smith, William F. 1993. Structure and Properties of Engineering Alloy. Second Edition. Mc-Graw-Hill Companies, Inc: New York

Supporters:

Supporting lecturer: Ir. Priyo Heru Adiwibowo, S.T., M.T.
Tri Hartutuk Ningsih, 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 describe the mechanical and physical properties of materials	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
2	Able to identify destructive and non-destructive testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
3	Able to describe tensile and impact testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
4	Able to describe tensile and impact testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
5	Able to classify variations in hardness testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
6	Able to classify variations in hardness testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
7	Be able to describe the stages of metallography	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
8	USS (attached)	USS (attached)	**Criteria:** USS (attached)	USS (attached) 1 X 1			0%
9	Able to describe surface roughness testing and coating thickness measurements	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%

10	Able to describe surface roughness testing and coating thickness measurements	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
11	Able to classify the types of fulorescence and dye penetrant testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
12	Able to describe radiography and magnetography testing	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
13	Able to carry out surface roughness and coating thickness testing procedures	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
14	Able to carry out surface roughness and coating thickness testing procedures	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			0%
15	Able to perform Rockwell hardness testing procedures	according to the rubric	**Criteria:** According to the Rubric	Lectures, discussions, questions and answers, exercises and 1 X 1 assignments			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.