	Universitas Negeri Surabaya **Faculty of Engineering** **, Electrical Engineering Education Undergraduate Study Program**	**Document Code**

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Engineering drawings	8320103251		T=3	P=0	ECTS=4.77	3	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Nur Kholis, 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 can understand how to prepare technical drawings, understand projection systems and understand cut drawings.
References	**Main :**

1. Anwari. 1978. Menggambar Teknik Mesin 2. Jakarta: Departemen Pendidikan dan kebudayaan.
2. Baharudin Yakob. 1979. Menggambar Mesin 3. Jakarta: Departemen Pendidikan dan Kebudayaan.
3. Juhana Ohan, Suratman. M. 2000. Menggambar Teknik Mesin. Bandung: Pustaka Grafika.
4. Marbun, Moyn. 1993. Menggambar Teknik Mesin. Bandung: Penerbit M2S.
5. Sato Takhesi, Sugiarto. 1986. Menggambar Mesin. Jakarta: Pradnya Paramita.

	Supporters:
Supporting lecturer	Dr. Edy Sulistiyo, M.Pd. Fendi Achmad, 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	Able to mention various technical drawing tools and draw lines and letters	Able to mention various technical drawing tools	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers and 2 X 50 exercises			0%
2	Able to draw pictorials	Skilled at drawing pictorials using various rules	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
3	Able to draw pictorials	Skilled at drawing pictorials using various rules	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
4	Able to draw orthogonal projections with European and American rules	Skilled at drawing projections	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
5	Able to draw orthogonal projections with European and American rules	Skilled at drawing projections	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
6	Able to draw orthogonal projections with European and American rules	Skilled at drawing projections	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
7	Able to determine the view of objects	Able to determine various views on projections	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
8	sub summative exam			2 X 50			0%
9	Able to explain the function of cut drawings and how to cut objects	Skilled in explaining various functions of images. Skilled in drawing pieces of objects	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%

10	Able to explain the function of cut drawings and how to cut objects	Skilled in explaining various functions of images. Skilled in drawing pieces of objects	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
11	Able to explain how to place cut images and draw shading	Skilled in making shading on cut objects	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
12	Able to explain how to place cut images and draw shading	Skilled in making shading on cut objects	**Criteria:** conformity with the answer key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
13	Able to draw various pieces	Skilled at drawing pieces	**Criteria:** suitability of answers to the key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
14	Able to draw various pieces	Skilled at drawing pieces	**Criteria:** suitability of answers to the key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
15	Able to draw various pieces	Skilled at drawing pieces	**Criteria:** suitability of answers to the key	Lectures, discussions, questions and answers, exercises and assignments 2 X 50			0%
16	summative exam			2 X 50			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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.