	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
Factory Layout Planning	2120102062		T=2	P=0	ECTS=3.18	7	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Ir. Priyo Heru Adiwibowo, 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	Understanding and knowledge of systematic procedures for designing the layout of production facilities and their supports.
References	**Main :**

1. Sritomo Wignyosoebroto. 1996. Tata Letak Pabrik dan Pemindahan bahan . Guna Widya Jakarta
2. James M Apple. 1990. Tata letak pabrik dan pemindahan bahan. Penerbit ITB Bandung
3. James L Riggs. 1981. Production Systems: Planning, Analysis and Control. John Wiley & Sons New York.

	Supporters:
Supporting lecturer	Dyah Riandadari, S.T., M.T. Ir. Wahyu Dwi Kurniawan, 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 explain his understanding of various manufacturing processes, the basics of factory design and factory design steps.	Explains various manufacturing processes, the basics of factory design and factory design steps.		Lectures, discussions and questions and answers. 2 X 50			0%

2	Able to explain his understanding of: the basics of selecting a factory location, factors that must be considered in determining a factory location, and methods for determining factory locations.	Explains the meaning of: the basics of selecting a factory location, factors that must be considered in determining a factory location, and methods for determining a factory location.		Lectures, discussions and questions and answers. 2 X 50			0%
3	Able to explain their understanding of: objectives, basic principles and steps for planning factory layouts, aspects taken into account in designing factory buildings, considerations in planning new factories and existing factories	Explain the meaning: objectives, basic principles and steps for planning factory layouts, aspects taken into account in designing factory buildings, considerations in planning new factories and existing factories		Lectures, discussions and questions and answers. 2 X 50			0%
4	Able to explain his understanding of: product analysis and process analysis.	Explains: product analysis and process analysis.		Lectures, discussions and questions and answers. 2 X 50			0%
5	Able to explain his understanding of: the basics of process design; process design methodology.	Explain: the basics of process design; process design methodology.		Lectures, discussions and questions and answers. 2 X 50			0%
6	Able to explain his understanding of: determining the capacity and number of machines needed; work station planning and the amount of area required.	Explain: determining the capacity and number of machines required; work station planning and the amount of area required.		Lectures, discussions and questions and answers. 2 X 50			0%
7	Able to explain his understanding of: layout types and the basics of their selection; material transfer flow patterns	Explains: layout types and the basics of their selection; material transfer flow patterns		Lectures, discussions and questions and answers 2 X 50			0%
8	Midterm Exam (UTS)			2 X 50			0%
9	Able to explain his understanding of: quantitative methods to analyze material flow	Explains: quantitative methods for analyzing material flow		Lectures, discussions and questions and answers. 2 X 50			0%
10	Able to explain his understanding of: qualitative methods for analyzing material flow.	Explains: qualitative methods for analyzing material flow.		Lectures, discussions and questions and answers. 2 X 50			0%

11	Able to explain their understanding of: general meaning, basic rules and principles for planning the movement of materials, the basis for selecting methods and equipment for moving materials and routes for moving materials.	Explain: definition and general meaning of material transfer; basic rules and principles for planning the movement of materials; basis for selecting material transfer methods and equipment; path in moving materials.		Lectures, discussions and questions and answers. 2 X 50			0%
12	Able to explain their understanding of: several aspects of the main objectives of material moving activities; the effect of material movement on plant layout; material moving costs.	Explain: several aspects of the main objectives of material transfer activities; the effect of material movement on plant layout; material moving costs.		Lectures, discussions and questions and answers. 2 X 50			0%
13	Able to explain his understanding of: material transfer and efforts to increase productivity; Quantitative analysis in material transfer problems.	Explains: material transfer and efforts to increase productivity; Quantitative analysis in material transfer problems.		Lectures, discussions and questions and answers. 2 X 50			0%
14	Able to explain his understanding of: systemic lay out planning and how to make detailed layout plans.	Explain: systemic lay out planning; how to make a detailed layout design.		Lectures, discussions and questions and answers. 2 X 50			0%
15	Able to explain his understanding of departmental planning and how it is organized.	Explains: departmental planning and how to organize it.		Lectures, discussions and questions and answers. 2 X 50			0%
16	Final Semester Examination (UAS)			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** 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.