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

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Research methodology	8320303081		T=3	P=0	ECTS=4.77	3	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Ir. Wahyu Dwi Kurniawan, S.Pd., M.Pd.

Learning model	**Project Based Learning**
Program Learning Outcomes (PLO)	**PLO study program which 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 teaches about the philosophy of the nature of scientific truth, the concept-theory of scientific truth, the methodology for finding scientific truth using scientific principles. Scientific methodology takes the form of quantitative and qualitative research approaches starting from recognizing, limiting and formulating problems, studying theoretical references-scientific findings to explaining problems, formulating hypotheses and designing verification methods starting from determining population-samples, developing measuring instruments, data collection-analysis techniques, and reporting results, complete reports, thesis examinations, and scientific publications both through scientific journals and scientific proceedings.
References	**Main :**

1. Arikunto, Suharsimi, 2006.Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta: Rineka Cipta.
2. Furchan, Arief, 1982. Pengantar Penelitian dalam Pendidikan. Surabaya: Usaha Nasional.
3. Sugiyono, Metode Penelitian Kuantitatif dan Kualitatif dan RD. Bandung: Penerbit AlfaBeta.
4. Referensi lain di Google

Supporters:	
Supporting lecturer	Dr. Soeryanto, M.Pd. Dr. Mochamad Cholik, 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	Students can explain science and its background, as well as how to obtain scientific truth through scientific methodology.	1. Students can explain the differences between scientific knowledge and religious knowledge.2. Students can write down the differences between scientific truth and truth obtained from authority.3. Students can write down several characteristics of scientific truth.	**Criteria:** 1. Scientific truth is theoretically logical and supported by correct facts or data	The learning approach and method is carried out with lectures, questions and answers, and reading assignments, as well as providing assignments summarizing each chapter 1 page 2 X 50			0%
2	Research Background: - The nature of the problem - The source of the problem Students can evaluate the problem, convey the problem, identify variable identification - Identify the population	Evaluate the problem - Convey the problem - Identify the problem - Identify the variables - Identify the population	**Criteria:** formulate scientific ideas and truths	Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 p. 2 X 50			0%
3	Literature & theory review - Understanding theory-library - The role of theory-library - Reference sources - Constructing theories - Deductive way of thinking - Inductive way of thinking Lecture Questions and answers Reading assignment Assignment to summarize each chapter 1 p.	Literature & theory review - Understanding theory-library - The role of theory-library - Reference sources - Constructing theories - Deductive way of thinking - Inductive way of thinking Lecture Questions and answers Reading assignment Assignment to summarize each chapter 1 p.	**Criteria:** If true 1 and if false 0	Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 page 2 X 50			0%
4	Hypothesis: - Deriving a hypothesis - Characteristics of a hypothesis - Stating a hypothesis - Testing a hypothesis Research plan	Hypothesis: - Deriving a hypothesis - Characteristics of a hypothesis - Stating a hypothesis - Testing a hypothesis Research plan		Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 p. 2 X 50			0%
5	Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 p.	Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 p.	**Criteria:** 1.Lecture 2.Question and answer 3.Reading assignment 4.The task summarizes each chapter 1 p.	2 X 50			0%
6	Experimental Method: - Characteristics - Experimental comparison - Experimental design	Experimental Method: - Characteristics - Experimental comparison - Experimental design		2 X 50			0%
7	Experimental Method: - Characteristics - Experimental comparison - Experimental design	Experimental Method:- Characteristics - Experimental comparison- Experimental design		2 X 50			0%

8	Ex post facto method - Difference between ex post & ex post facto - Causal relationship - Partial control - Research design - Research procedures - Role of research -	Lecture Question and answer Reading assignment Assignment to summarize each chapter 1 p.		2 X 50			0%
9	Questions and answers Reading assignment Assignment to summarize each chapter 1 p	Questions and answers Reading assignment Assignment to summarize each chapter 1 p		2 X 50			0%
10	Measurement scales and research instruments - Types of measurement scales - Research instruments - How to prepare instruments - Examples of research instruments developed			2 X 50			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** 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.