	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
Microprocessor	8320103079		T=3	P=0	ECTS=4.77	6	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Nur Kholis, 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 equips electrical engineering education students to understand how microprocessors work on computers. The material that will be studied in this course includes computer architecture, a minimum 8088 microprocessor system and microprocessor programming techniques using assembly language. After taking this course, students are expected to be able to explain the definition and how a microprocessor works on a computer, starting from architecture, programming and interfaces.
References	**Main :**
	1. Brey, Barry B. 2003. Mikroprosesor Intel, 6th Edition. New Jersey: The Pearson Education, Inc. 2. Setiawan, Rachmad. 2006. Mikroprosesor 8088. Yogyakarta: Graha Ilmu.
	Supporters:
Supporting lecturer	Adam Ridiantho Muhamad, S.T., M.T. Arif Widodo, S.T., M.Sc.

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	Explain the definition and development of microprocessors	1. Explain the definition of a microprocessor and its differences from a microcontroller 2. Tells the history of microprocessors 3. Mention several types of microprocessors and their development 4. Mention the applications of microprocessors in everyday life		Model: Discovery learning Method: Discussion Approach: Scientific 3 X 50			0%
2	Explain microprocessor architecture	1. Understand the internal architecture of a microprocessor 2. Mention 3 types of microprocessor architecture 3. Classifying microprocessor architecture based on the number of instruction sets		Model: Discovery learning Method: Discussion Approach: Scientific 3 X 50			0%
3	Explain microprocessor architecture	1. Understand the internal architecture of a microprocessor 2. Mention 3 types of microprocessor architecture 3. Classifying microprocessor architecture based on the number of instruction sets		Model: Discovery learning Method: Discussion Approach: Scientific 3 X 50			0%
4	Students are able to analyze how microprocessors work	1. Understanding the Bus System Architecture on the 8088 microprocessor 2. Mentions Addressing Modes 3. Shows how the microprocessor interfaces with other components		Model: Discovery/ Inquiry Method: Discussion Approach: Constructivist 3 X 50			0%
5	Students are able to analyze how microprocessors work	1. Understanding the Bus System Architecture on the 8088 microprocessor 2. Mentions Addressing Modes 3. Shows how the microprocessor interfaces with other components		Model: Discovery/ Inquiry Method: Discussion Approach: Constructivist 3 X 50			0%
6							0%
7							0%
8							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.