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

SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Digital Circuit I		2020102156		**T=2**	**P=0**	**ECTS=3.18**	2	July 18, 2024
AUTHORIZATION		**SP Developer**		**Course Cluster Coordinator**			**Study Program Coordinator**	
		....		....			Dr. Lusia Rakhmawati, 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	Discusses basic concepts of digital engineering, number systems, logic gates, Boolean algebra, design of combinational circuits, sequential circuits, counters, and registers and their applications in everyday life

References	**Main :**
	1. Floyd, Thomas L. 2000. Digital Fundamentals. seventh edition. Ney Jersey : Prentice-Hall 2. Tocci, Ronald J. 1988. Digital Systems : Principles and aplication. Englewood Cliffs, New Jersey : Prentice- Hall.
	Supporters:

Supporting lecturer	Dr. Farid Baskoro, S.T., M.T. Pradini Puspitaningayu, S.T., M.T., Ph.D.

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 are able to understand the basic concepts of digital electronics	1. State the difference between analog and digital signals2. Identify various parameters of the pulse wave (rise time, fall time, pulse width, frequency, period, duty cycle)3. Identifying digital IC pins. Knowing digital equipment and understanding how it operates for troubleshooting digital circuits	**Criteria:** The assessment criteria are carried out by looking at the following aspects: 1. Participation: carried out by observing student activities (weight 2)2. UTS: carried out with an assessment during the middle of the semester (weight 2)3. UAS: carried out every semester to measure all indicators (weight 3) 4. Assignment: carried out on each indicator (weight 3) Final Student Score: Participation Score (2) x Lever Score (3) x UTS Score (2) x UAS Score (3) divided by 10.	Presentation, group discussion and reflection 2 X 50			0%
2	Students are able to master number systems, operations and codes	1. Review the Decimal number system2. Calculating the binary number system3. Convert from decimal to binary and binary to decimal4. Determine the 1st and 2nd complement of binary numbers 5. Expressing signed numbers6. Conversion between binary and hexadecimal number systems7. Conversion between binary and octal number systems8. Expressing decimal numbers in binary coded decimal (BCD) form9. Convert between binary systems with GrayInterpret ASCII code	**Criteria:** Participation Score (2) x Lever Score (3) x UTS Score (2) x UAS Score (3) divided by 10	Presentation, discussion and reflection 4 X 50			0%
3							0%
4	Students are able to understand basic logic gates	1. Students are able to know the history of the discovery of logic gates 2. Students are able to understand OR logic gates (Or gate logic) 3. Students are able to understand AND logic gates (AND gate logic)4. Students are able to understand NOT (inverter) or complement logic gates	**Criteria:** Students will get good grades if they can answer questions correctly and can make presentations well	1. PPT (power point)2. discussion and questions and answers 2 X 50			0%

5	Students are able to understand basic logic gates	1. Students are able to know the history of the discovery of logic gates 2. Students are able to understand OR logic gates (Or gate logic) 3. Students are able to understand AND logic gates (AND gate logic)4. Students are able to understand NOT (inverter) or complement logic gates	**Criteria:** Students will get good grades if they can answer questions correctly and can make presentations well	1. PPT (power point)2. discussion and questions and answers 2 X 50				0%
6	Students are able to understand combination logic gates	1. Students are able to understand the NOR2 logic gate. Students are able to understand the NAND3 logic gate. Students are able to understand the OR4 exclusive logic gate. Students are able to understand the exclusive logic gate NOT OR	**Criteria:** Students will get good grades if they can answer the questions correctly and complete all the assignments given	1. Discussion2. Questions and Answers3. Power point 2 X 50				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.