



**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																																	
Digital Signal Processing	8320102093		T=2 P=0 ECTS=3.18	4	July 17, 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																																					
	PLO-6	Able to plan, implement, and evaluate effective and efficient innovative learning programs in electrical engineering vocational education that are relevant to global industrial developments (Education).																																				
	PLO-7	Able to apply applied research to innovate vocational learning methods, optimize production process technology and electrical engineering services relevant to industry (Education).																																				
	Program Objectives (PO)																																					
	PLO-PO Matrix																																					
		<table border="1" style="margin: auto;"> <tr> <td style="width: 20%;">P.O</td> <td style="width: 20%;">PLO-6</td> <td style="width: 20%;">PLO-7</td> <td colspan="3"></td> </tr> </table>					P.O	PLO-6	PLO-7																													
	P.O	PLO-6	PLO-7																																			
PO Matrix at the end of each learning stage (Sub-PO)																																						
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 10%;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 5%;">1</td> <td style="width: 5%;">2</td> <td style="width: 5%;">3</td> <td style="width: 5%;">4</td> <td style="width: 5%;">5</td> <td style="width: 5%;">6</td> <td style="width: 5%;">7</td> <td style="width: 5%;">8</td> <td style="width: 5%;">9</td> <td style="width: 5%;">10</td> <td style="width: 5%;">11</td> <td style="width: 5%;">12</td> <td style="width: 5%;">13</td> <td style="width: 5%;">14</td> <td style="width: 5%;">15</td> <td style="width: 5%;">16</td> </tr> </table>					P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P.O	Week																																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																						
Short Course Description	This course discusses the basic concepts of signals and systems. fourier analysis, sampling and Z transformation along with analysis of LTI, DFT, and FFT system transformations and their implementation.																																					
References	Main :																																					
	1. John G proakis, Dimitri G. Manolakis, digital signal processing principles, algorithms and application. 1996, USA, Prentice Hall																																					
	Supporters:																																					
Supporting lecturer	Dr. Raden Roro Hapsari Peni Agustin Tjahyaningtjas, S.Si., M.T. Dr. Lusia Rakhmawati, S.T., M.T.																																					
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	introduction, explanation of lecture material and rules			3 X 50			0%																															

2	students are able to understand the signaling process, signal classification, the concept of continuous and discrete frequency time, analog to digital and digital to analog changes	<ol style="list-style-type: none"> 1.explains the basic elements of PSD 2.explain continuous signals and discrete signals 3.explains continuous and discrete time sinusoidal signaling 4.explains the analog to digital change and the process 		lectures, discussions and questions and answers 3 X 50			0%
3	students are able to understand the signaling process, signal classification, the concept of continuous and discrete frequency time, analog to digital and digital to analog changes	<ol style="list-style-type: none"> 1.explains the basic elements of PSD 2.explain continuous signals and discrete signals 3.explains continuous and discrete time sinusoidal signaling 4.explains the analog to digital change and the process 		lectures, discussions and questions and answers 3 X 50			0%
4	understand discrete signal signaling time which includes discrete signaling time, discrete time systems, discrete time linear invariant analysis and its implementation	<ol style="list-style-type: none"> 1.explains the concept and elements of discrete signal time 2.explain input-output and block diagram of discrete signals 3.explains techniques for linear system analysis 4.explains the linear time invariant characteristics of systems 		Lectures, discussions and questions and answers 3 X 50			0%
5	understand discrete signal signaling time which includes discrete signaling time, discrete time systems, discrete time linear invariant analysis and its implementation	<ol style="list-style-type: none"> 1.explains the concept and elements of discrete signal time 2.explain input-output and block diagram of discrete signals 3.explains techniques for linear system analysis 4.explains the linear time invariant characteristics of systems 		Lectures, discussions and questions and answers 3 X 50			0%

6	students are able to study the Z transformation and its application for LTI system analysis	1.Explain the concept of Z transformation 2.explains the Z transformation table 3.explain the Z transformation investments 4.System LTI analysis on Z transformation		students are able to study the Z transformation and its application for analysis of the 3 X 50 LTI system			0%
7	students are able to study the Z transformation and its application for LTI system analysis	1.Explain the concept of Z transformation 2.explains the Z transformation table 3.explain the Z transformation investments 4.System LTI analysis on Z transformation		students are able to study the Z transformation and its application for analysis of the 3 X 50 LTI system			0%
8	UTS			3 X 50			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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.