



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

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																											
Practice of Algorithms and Computer Programming	2020102130		T=2	P=0	ECTS=3.18	1	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)																																																	
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="width: 5%;">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 lecture discusses the concepts of Algorithms, Top Down, Bottom Up Programming, Data Structure Models, Abstract Data Types, Algorithm Design Methods, Function Growth, Search, Sorting Algorithms and their applications in everyday life.																																																	
References	Main :																																																	
	1. Cormen. 2009. Introduction to Algorithms 3rd edition. Massachusetts Institute of Technology. 2. Rao. Introduction to Design & Analysis of Algorithms - In Simple Way 3. Levitin. 2012. Introduction to The Design and Analysis of Algorithms. 3rd edition. Pearson.																																																	
	Supporters:																																																	
Supporting lecturer	EPPY YUNDRA																																																	
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 algorithms	<ol style="list-style-type: none"> 1. Understanding the Definition of an Algorithm 2. Explain the steps for creating an algorithm 3. Provide an example of an algorithm in a case 	Criteria: The maximum score is 100, if the practical results are correct and correct	Presentation, discussion, Practicum 2 X 50			0%
2	Top Down and Bottom Up Programming	<ol style="list-style-type: none"> 1. Understanding Top Down Programming 2. Explains examples of Top Down Programming 3. Understanding Bottom Up Programming 4. Explaining examples of Bottom Up 	Criteria: The maximum score is 100, if the practicum results report is filled in correctly and precisely	Lectures and practicum 2 X 50			0%
3	Top Down and Bottom Up Programming	<ol style="list-style-type: none"> 1. Understanding Top Down Programming 2. Explains examples of Top Down Programming 3. Understanding Bottom Up Programming 4. Explaining examples of Bottom Up 	Criteria: The maximum score is 100, if the practicum results report is filled in correctly and precisely	Lectures and practicum 2 X 50			0%
4	Data Structure Model and Abstract Data Type	- Know the Graph/Network Model - Can represent Networks - Understand Connect Algorithms - Understand Data Structures	Criteria: The maximum score is 100 if the practice results are correct and correct	Lectures, discussions and practice 2 X 50			0%
5	Data Structure Model and Abstract Data Type	- Know the Graph/Network Model - Can represent Networks - Understand Connect Algorithms - Understand Data Structures	Criteria: The maximum score is 100 if the practice results are correct and correct	Lectures, discussions and practice 2 X 50			0%
6	Algorithm Design Methods	- Understanding Subgoals, Hill Climbing, Work Backward - Understanding Heuristics - Understanding Backtrack - Understanding Recursion Programming	Criteria: The maximum score is 100, if the practice results are correct and correct	Lectures, discussions and practice 2 X 50			0%
7	Algorithm Design Methods	- Understanding Subgoals, Hill Climbing, Work Backward - Understanding Heuristics - Understanding Backtrack - Understanding Recursion Programming	Criteria: The maximum score is 100, if the practice results are correct and correct	Lectures, discussions and practice 2 X 50			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.