	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Undergraduate Physics Study Program		Document Code

SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Algorithm		4520103003		T=3	P=0	ECTS=4.77	4	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Prof. Dr. Munasir, S.Si., M.Si.

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	Learn the basics of algorithms, rules for writing algorithmic texts, types, names and values, sequences, selection, repetition, procedures, functions, text processing, arrays, case studies. learning method Lecture, discussion, question and answer and independent assignments learning method Lecture, discussion, question and answer and independent assignment

References	**Main :**

1. Abdul kadir., Heriyanto., 2005 ., Algoritma Pemrograman.Andy Yogyakarta
2. Rinaldi Munir 2004, Algoritma dan pemrograman. Informatika Bandung
3. Abdul Kadir 2003.,Dasar Pemrograman. Andi Yogyakarta
4. Suarga., M.Math.,Ph.D.,2004, Algoritma dan Pemograman. Andi Yogyakarta

	Supporters:

Supporting lecturer	Dzulkiflih, S.Si., 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	Understand the concepts and meaning of algorithms, the properties of an algorithm, the use of flowcharts, can make flowcharts from everyday cases	· Explain the basic concepts of algorithms. Explain the relationship between flowcharts and algorithms	**Criteria:** UTS, UAS, Assignments	· Discussion of Problem Solving 3 X 50			0%

2	Understand the concepts and meaning of algorithms, the properties of an algorithm, the use of flowcharts, can make flowcharts from everyday cases	· Explain the basic concepts of algorithms. Explain the relationship between flowcharts and algorithms	**Criteria:** UTS, UAS, Assignments	· Discussion of Problem Solving 3 X 50			0%
3	Know and be able to explain various data types, constants, variables and expressions	Explain the concept of constant data types and their applications	**Criteria:** Task	lectures, discussions, assignments and practicums 3 X 50			0%
4	Know and be able to explain various data types, constants, variables and expressions	Explain the concept of constant data types and their applications	**Criteria:** Task	lectures, discussions, assignments and practicums 3 X 50			0%
5	Students can explain the concept of using While-Do, Repeat-Until and For loop structures, differentiating the use of loop structures.	· Explain the While-Do, Repeat-Until and For loops, distinguishing the use of loop structures	**Criteria:** activeness in lectures	lecture, discussion, practicum 3 X 50			0%
6	Students can explain the concept of using While-Do, Repeat-Until and For loop structures, differentiating the use of loop structures.	· Explain the While-Do, Repeat-Until and For loops, distinguishing the use of loop structures	**Criteria:** activeness in lectures	lecture, discussion, practicum 3 X 50			0%
7	Students can explain the concept of using While-Do, Repeat-Until and For loop structures, differentiating the use of loop structures.	· Explain the While-Do, Repeat-Until and For loops, distinguishing the use of loop structures	**Criteria:** activeness in lectures	lecture, discussion, practicum 3 X 50			0%
8	Understanding material concepts and their applications as well as studying problems encountered every day	· Explain the concept of constant data types and their applications · Explain the While-Do, Repeat-Until and For loops, differentiate the use of loop structures	**Criteria:** activeness in lecture classes	lectures, discussions, practicums and material consolidation tests during half of the 3 X 50 lecture journey			0%
9	Students can mention various condition selection statements, the general form of IF and CASE condition statements	Explain the various condition selection statements, the general form of IF condition statements and CASE loop structures	**Criteria:** active in attending lectures	· Discussion of Problem Solving 3 X 50			0%
10	Students can mention various condition selection statements, the general form of IF and CASE condition statements	Explain the various condition selection statements, the general form of IF condition statements and CASE loop structures	**Criteria:** active in attending lectures	· Discussion of Problem Solving 3 X 50			0%

11	Students can mention various condition selection statements, the general form of IF and CASE condition statements	Explain the various condition selection statements, the general form of IF condition statements and CASE loop structures	**Criteria:** active in attending lectures	· Discussion of Problem Solving 3 X 50			0%
12	Students can explain about sending parameters by value, sending parameters by reference, how procedures call other procedures, making simple programs using procedures	Explains sending parameters by reference, how procedures call other procedures, creating simple programs using procedures	**Criteria:** active in attending lectures	· Discussion of Problem Solving 3 X 50			0%
13	Students can explain about sending parameters by value, sending parameters by reference, how procedures call other procedures, making simple programs using procedures	Explains sending parameters by reference, how procedures call other procedures, creating simple programs using procedures	**Criteria:** active in attending lectures	· Discussion of Problem Solving 3 X 50			0%
14	· Students can explain the formation of functions without parameters, sending parameters in functions, calling nested procedures · Students can explain the declaration of a Record and how to use it. In-depth material and concepts about Algorithms	• Explains the formation of functions without parameters, sending parameters in functions, calling nested procedures • explains the declaration of Records and how to use them Explains the While-Do, Repeat-Until and For loops, distinguishes the use of loop structures	**Criteria:** active in attending lectures	lectures, discussions, practicums Written tests, discussing questions, discussions and enlightenment of all material that has been taught 3 X 50			0%
15	· Students can explain the formation of functions without parameters, sending parameters in functions, calling nested procedures · Students can explain the declaration of a Record and how to use it. In-depth material and concepts about Algorithms	• Explains the formation of functions without parameters, sending parameters in functions, calling nested procedures • explains the declaration of Records and how to use them Explains the While-Do, Repeat-Until and For loops, distinguishes the use of loop structures	**Criteria:** active in attending lectures	lectures, discussions, practicums Written tests, discussing questions, discussions and enlightenment of all material that has been taught 3 X 50			0%

| 16 | · Students can explain the formation of functions without parameters, sending parameters in functions, calling nested procedures · Students can explain the declaration of a Record and how to use it. In-depth material and concepts about Algorithms | • Explains the formation of functions without parameters, sending parameters in functions, calling nested procedures • explains the declaration of Records and how to use them Explains the While-Do, Repeat-Until and For loops, distinguishes the use of loop structures | **Criteria:** active in attending lectures | lectures, discussions, practicums Written tests, discussing questions, discussions and enlightenment of all material that has been taught 3 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.