

HANDBOOK

BACHELOR OF INFORMATICS PROGRAM

DEPARTMENT OF INFORMATICS

FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Module name	Design and Analysis Algorithm
Module level	Undergraduate
Code	IF184401
Courses (if applicable)	Design and Analysis Algorithm
Semester	4
Contact person	
Lecturer	
Language	Bahasa Indonesia and English
Relation to curriculum	<ol style="list-style-type: none"> 1. Undergraduate degree program; mandatory; 4th semester. 2. International undergraduate program; mandatory; 4th semester.
Type of teaching, contact hours	<ol style="list-style-type: none"> 1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 40 students
Workload	<ol style="list-style-type: none"> 1. Lectures: 4 x 50 = 200 minutes (3 hours 20 minutes) per week. 2. Exercises and Assignments: 4 x 60 = 240 minutes (4 hours) per week. 3. Private study: 4 x 60 = 240 minutes (4 hours) per week.
Credit points	4 credit points (sks).
Requirements according to the examination	A student must have attended at least 80% of the lectures to sit in the exams.

regulations	
Mandatory prerequisites	Data Structure
	After completing this module, a student is expected to:

Learning outcomes and their corresponding PLOs	CO1 Students are able to explain the role of algorithms in computing.	
	CO2 Mahasiswa mampu menjelaskan, merepresentasikan dan menghitung kompleksitas algoritma dalam notasi asimtotik (big-oh, theta, little-oh).	
	CO3 Mahasiswa dapat menganalisis kebenaran menggunakan loop invariant dari algoritma straight-forward/iteratif dan divide-conquer).	
	CO4 Students can explain strategies and design analysis and implementation of recursive and non-recursive algorithms to solve real problems	
Content	<p>Knowledge: Mastering concept and theory to effectively construct and apply techniques for analyzing and designing algorithms.</p> <p>Specific Skill: Able to understand the intrinsic nature of problems as well as possible solution techniques independent of programming language, programming paradigm, computer hardware, or any other implementation aspect.</p>	
Study and examination requirements and forms of examination	Mid-terms examination and Final examination.	
Media employed	LCD, whiteboard, websites, books (as references), etc.	
Assessments and Evaluation		

Reading List	<ul style="list-style-type: none">• Levitin, Anany, "Introduction to The Design & Analysis Af algorithms 3rd ed", Addison-Wesley, 2012• Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, "Introduction to Algorithms Third Edition", MIT Press, 2009