



MODULE HANDBOOK DESCRIPTION

Module designation	Algorithms and Data Structures Laboratory	
Code	FBD3213	
Semester(s) in which the module is taught	6 / third year	
Person responsible for the module	Cipta Ramadhani, ST., M.Eng.	
Language	Indonesian.	
Relation to curriculum	Concentration Elective for Computer Engineering.	
Teaching methods	Contextual Instruction (CI).	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester : <ul style="list-style-type: none"> • Practice : 1 x 50 minutes • Data analysis : 1 x 60 minutes • Writing report : 1 x 60 minutes. Total study hours = 2 hours 50 minutes/week	
Credit points	1 (~ 1,6 ECTS)	
Required and recommended prerequisites for joining the module	- Object Oriented Programming (FBD3104) - Algorithms and Data Structures (FBD3209)	
Module objectives/intended learning outcomes	1. Students are able to analyze several data structure such as: linked list, stack, queue, tree and Graph.	PLO3
	2. Students are able to write source code such as searching and sorting, single linked list, double linked list, binary search tree and Dijkstra using Java programming	PLO4
	3. Students are able to compare the difference between Queue and stack, BFS and DFS graph, stack and queue, single linked list and double linked list.	PLO5

Content	<ol style="list-style-type: none"> 1. Searching and Sorting algorithm, 2. Linked List, 3. Stack and Queue, 4. tree structure, 5. Binary Search Tree, 6. BFS and DFS Graph 7. Dijkstra Graph.
Examination forms	<ol style="list-style-type: none"> 1. Pre-test 2. Practice skills 3. Practice report 4. Response
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> 1. Pre-test and practice skills = 20% 2. Practice report and response = 80% <p>Students must have a final grade of 65% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> 1. Introduction to Algorithm, 1989, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein. MIT Press. 2. Head First Java, 2nd edition, 2008, Bert Bates and Kathy Sierra, O'Reilly. 3. Java™ How to Program, 9th, 2012, Prentice Hall. 4. Algoritma dan Struktur Data Dengan Bahasa Java, 2015, Cipta Ramadhani, Andi Publisher.