



### MODULE HANDBOOK DESCRIPTION

Module designation	Algorithm and Data Structure	
Code	EB4001	
Semester(s) in which the module is taught	6 / third year	
Person responsible for the module	Cipta Ramadhani, S.T., M.Eng	
Language	Indonesian	
Relation to curriculum	Compulsory course for computer system	
Teaching methods	Lecture, small group discussion, case base method.	
Workload (incl. contact hours, self-study hours)	<p>Contact minutes every week, each week of the 16 weeks/semester :</p> <ul style="list-style-type: none"> <li>• Lectures: 2 x 50 minutes</li> <li>• Exercises and Assignments: 2 x 60 minutes</li> <li>• Private study: 2 x 60 minutes.</li> </ul> <p>Total study hours = 5 hours 40 minutes/week</p>	
Credit points	2 (~ 3,2 ECTS)	
Required and recommended prerequisites for joining the module	- Algorithm and programming (ES 1215)	
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> <li>1. Students are able to understand the concept of array and pointer.</li> <li>2. Students are able to understand the concept of graph theory.</li> <li>3. Students are able to understand the concept of tree data structure</li> </ol>	PLO3, PLO4
	<ol style="list-style-type: none"> <li>4. Students are able to create and understand the concept of Stack and Queue</li> <li>5. Students are able to create Linked List</li> </ol>	PLO3
	<ol style="list-style-type: none"> <li>6. Students are able to create Binary Search Tree</li> <li>7. Students are able to create BFS and DFS algorithm</li> </ol>	PLO5

Content	Array and pointer, Linked List, Stack and Queue, the concept of tree structure, Binary Search Tree, Graph.
Examination forms	Multiple choice examination and Essay , Presentation case study
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> <li>a. Exercise Report/ Homework/Portofolio = 15%</li> <li>b. Projects: 55%</li> <li>c. Midterm assessment: 15%</li> <li>d. Final assessment: 15%</li> </ol> <p>Students must have a final grade of 70% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> <li>1. Introduction to Algorithm, 1989, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein. MIT Press</li> <li>2. Head First Java, 2nd edition, 2008, Bert Bates and Kathy Sierra, O'Reilly</li> <li>3. Java™ How to Program, 9th, 2012, Prentice Hall</li> <li>4. Head First Java, 2nd edition, 2008, Bert Bates and Kathy Sierra, O'Reilly</li> <li>5. Java™ How to Program, 9th, 2012, Prentice Hall</li> <li>6. Head First Object Oriented Design and Analysis, 1st edition, 2006, Brett D. McLaughlin, Gary Pollice, David West, O'Reilly Media.</li> <li>7. Algoritma, Pemrograman dan Struktur Data dengan Bahasa C++, 2017, Andi Publisher</li> </ol>

- Mohon dicek kembali semesternya, dan penulisan referensi: nama pengarang, tahun judul penerbit