MODULE HANDBOOK DESCRIPTION

Module designation	Distributed System	
Code	FBD0012	
Semester(s) in which the module is taught	6 / third year	
Person responsible for the module	L. Ahmad Syamsul Irfan Akbar, ST.,M.Eng	
Language	Indonesian	
Relation to curriculum	Free elective for Computer Engineering	
Teaching methods	Lectures, cooperative Learning	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: • Lectures: 2 x 50 minutes • Exercises and Assignments: 2 x 60 minutes • Self-study: 2 x 60 minutes. Total study hours = 5 hours 40 minutes/week.	
Credit points	2 SKS (~ 3.2 ECTS)	
Required and recommended prerequisites for joining the module		
Module objectives/intended learning outcomes	1. Students can analyze architecture and architectural models of distributed systems, analyze communication between nodes in distributed systems, analyze communication protocols between nodes, and analyze data transmission methods in distributed systems.	PLO3

	2. Students are able to design and implement effective and efficient distributed system solutions to meet business and technology needs. They can identify complex problems in distributed systems and apply software engineering principles to design, test, and implement solutions that can be validated and adjusted to business requirements. Students can develop distributed system architectures that consider security, scalability, and availability factors, as well as consider redundancy strategies to ensure continuous system availability.	PLO 4
	3. Demonstrate the ability to continue learning and keep up with the latest technology developments in the field of distributed systems and related technologies to enhance professionalism and career prospects in the future. Students are able to develop self-learning skills, seek relevant learning sources, and keep up with the latest technology developments to optimize the use of technology in distributed systems environments.	PLO9
Content	- The basic definitions and concepts of distributed systems - Distributed Systems Architecture - Data transmission method - Consistency and Tolerance of Failure - The concept of data consistency in distributed systems - Scheduling and Load Balancing - Security in Distributed Systems - Distributed System Applications - Analysis and evaluation of distributed system applications.	
Examination forms	- Complete the group task of building a distributed system - Midterm and final test	
Study and examination requirements	The final grade in the module is composed of: a. Attendance: 10% b. Case assessment: 4 x 15% = 60% c. Midterm assessment: 15% d. Final assessment: 15% Students must have a final grade of 65% or higher to pass	

Reading list	1. Peter S. Pacheco, "Parallel Programming with MPI". Morgan Kaufmann Publishers, 2011.
	2. Jay Lofstead, Garth Gibson, David A. Bader, "Mastering MPI: A Platform-Independent Approach to Parallel Computing". Morgan Kaufmann Publishers, 2017.