MODULE HANDBOOK DESCRIPTION

Module designation	Cloud Computing Technology
Code	FBD4116
Semester(s) in which the module is taught	*4 / third year*
Person responsible for the module	*Giri Wahyu Wiriasto, S.T., M.T*
Language	*Indonesian*
Relation to curriculum	*Compulsory*
Teaching methods	*Case Base Method, Project Based*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester : (per week includes) • 2 x 50 minutes : Lecture • 2 x 60 minutes : Exercise and Assignment • 2 x 60 minutes : Self-learning total Study hours = 340 minutes/week
Credit points	*2 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	Basic Programming (FBS1215) Database (FBS3102) Basic Programming Laboratory (FBD1216) Database Laboratory (FBS3106) Computer Network(FBD3208) Computer Network Laboratory (FBD3214)
Module objectives/Program Learning Outcomes (PLO)	PLO 3 (M) – Engineering Analysis :Able to choose methode, make literature reviews, design experiments with simulations, and analyze result to reach the right conclutions, as well as develop guidelines for using tools PLO 4 (H) – Engineering Design : Able to design and develop components, system and/or processes to support engineering activities and create technologicsl innovations by optimally utilizing potential resources PLO 5 (L) – Experiment : Able to design and carry out experiments using basic and modern technical tools and analyze and interpret data based on the correct methodology to strengthen engineering assessments

	1. Student are able to explain cloud computing: The first objective could be to gain a general understanding of cloud computing, including the key concepts, models, and benefits. This could include learning about the different types of cloud services, such as IaaS, PaaS, and SaaS, as well as the underlying technologies that enable cloud computing, such as virtualization and automation. 2. Student are able to explain Cloud deployment models: A second objective could be to understand the different deployment models for cloud computing, including public, private, and hybrid clouds. This could involve learning about the advantages and disadvantages of each model, as well as the security and compliance considerations. 3. Student are able to explain Cloud security: A fourth objective could be to learn about the security and privacy considerations for cloud computing. This could involve understanding the different security models and technologies used to secure cloud-based solutions, as well as the compliance and regulatory requirements that may apply to different industries and use cases. 4. Student are able to explain Cloud management and operations: Finally, a learning objective could be to gain practical skills in managing and operating cloud-based solutions. This could involve learning about the tools and techniques used to monitor, optimize, and troubleshoot cloud environments, as well as the best practices for managing costs, performance, and availability.	PLO-3
	1. Student are able design Cloud architecture and design: Another objective could be to gain knowledge about the architectural and design considerations for building and deploying cloud-based solutions. This could involve learning about the different layers of the cloud stack, such as infrastructure, platform, and software, as well as the design	PLO-4

	principles for scaling, resiliency, and availability.	
	1. Student are able to Setting up and managing a virtual machine (VM) in the cloud or CPANEL : In this lab, you could learn how to provision and configure a virtual machine in a public cloud provider such as Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform (GCP). You could learn how to choose the appropriate VM size, storage options, and networking settings, as well as how to manage the VM over time. 2. Building and deploying a cloud-native application: In this lab, you could learn how to build and deploy a cloud-native application using a platform-as-a-service (PaaS) provider such as Heroku, Cloud Foundry, or OpenShift. You could learn how to use a modern application development stack, such as Node.js, Python, or Java, as well as how to use cloud-native tools for managing database, caching, and messaging services.	PLO-5
Content	Introduction Cloud Computing Technology ,	
Examination forms	*Multiple choice examination and Essay, Presentation case study, Document Software Requirement Spesification*	
Study and examination requirements	*Per-meeting score = 5 % x 16 meeting = 80%* *Exercise Report/ Homework/Portofolio = 20%*	
Reading list	1. "Cloud Computing: Concepts, Technology & Architecture" by Thomas Erl, Zaigham Mahmood, and Ricardo Puttini. 2. "Cloud Native Development Patterns and Best Practices: Practical Architectures for Sustainable Enterprise Computing" by John Gilbert. 3. "AWS Certified Solutions Architect Official Study Guide: Associate Exam" by Joe Baron, Hisham Baz, Tim Bixler, Biff Gaut, and Kevin E. Kelly. 4. "Microsoft Azure Architect Technologies Exam Ref AZ-303" by Mike Pfeiffer. 5. "Google Cloud Platform in Action" by J. E. Kaiser, R. F. Berg, and M. A. Caputo.	