



MODULE HANDBOOK DESCRIPTION

Module designation	Basic Information Technology
Code	FBS1109
Semester(s) in which the module is taught	1 / first year
Person responsible for the module	Giri Wahyu Wiriasto, S.T., M.T.
Language	Indonesian
Relation to curriculum	Compulsory for all Majors
Teaching methods	Case Base Method
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester : (per week includes) <ul style="list-style-type: none">• 2 x 50 minutes : Lecture• 2 x 60 minutes : Exercise and Assignment• 2 x 60 minutes : Self-learning Total Study hours = 5 hours and 40 minutes/week
Credit points	2 SKS (~ 3,2 ECTS)
Required and recommended prerequisites for joining the module	-

<p>Module objectives/Program Learning Outcomes (PLO)</p>	<ol style="list-style-type: none"> 1. Students are able to explain cloud computing: The first objective should be to gain a general understanding of cloud computing, including the key concepts, models, and benefits. This may involve learning about 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. Students are able to explain cloud deployment models: A second objective should be to understand the different deployment models for cloud computing, including public, private, and hybrid clouds. This may involve learning about the advantages and disadvantages of each model, as well as the security and compliance considerations involved. 3. Students are able to explain cloud security: A fourth objective should be to learn about the security and privacy considerations for cloud computing. This may 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. Students are able to explain cloud management and operations: Finally, a learning objective should be to gain practical skills in managing and operating cloud-based solutions. This may 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. 	<p>PLO2</p>
	<ol style="list-style-type: none"> 5. Students are able to analyze cloud architecture and design: Another objective should be to gain knowledge about analyzing the architectural and design considerations for building and deploying cloud-based solutions. This may involve learning about the different layers of the cloud stack, such as infrastructure, platform, and software, as well as the design principles for scaling, resiliency, and availability. 	<p>PLO3</p>

	<ol style="list-style-type: none"> 6. Students are able to continuously learn about setting up and managing virtual machines (VMs) in the cloud or CPANEL. This could involve learning how to provision and configure VMs in various public cloud providers such as Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform (GCP). Students could learn how to choose the appropriate VM size, storage options, and networking settings, as well as how to continuously manage the VMs for optimal performance. 7. Students can learn how to build and deploy cloud-native applications using platform-as-a-service (PaaS) providers such as Heroku, Cloud Foundry, or OpenShift. This involves learning how to use modern application development stacks like Node.js, Python, or Java, as well as cloud-native tools for managing databases, caching, and messaging services. By the end of the course, students should be able to successfully build and deploy a cloud-native application. 	PLO9
Content	<ol style="list-style-type: none"> 1. Introduction to information technology and computer systems, 2. Computer hardware and software, 3. Operating systems and file management, 4. Computer networks and the Internet, 5. Introduction Cloud Computing Technology, 6. Basic programming concepts, 7. Information literacy and research skills, 8. Ethics and social implications of information technology. 	
Examination forms	Multiple choice examination and Essay, Presentation case study, Document Software Requirement Specification.	
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> 1. Per-meeting score = 5 % x 16 meeting = 80% 2. Exercise Report/ Homework/Portofolio = 20% <p>Students must have a final grade of 65% or higher to pass.</p>	

Reading list	<ol style="list-style-type: none">1. "Cloud Computing: Concepts, Technology & Architecture" by Thomas Erl, Zaigham Mahmood, and Ricardo Puttini, 2013.2. "Cloud Native Development Patterns and Best Practices: Practical architectural patterns for building modern, distributed cloud-native systems" by John Gilbert, 2018.3. "AWS Certified Solutions Architect Official Study Guide: Associate Exam" by Joe Baron, Hisham Baz, Tim Bixler, Biff Gaut, and Kevin E. Kelly, 2016.4. "Microsoft Azure Architect Technologies Exam Ref AZ-303" by Mike Pfeiffer, 2020.5. "Google Cloud Platform in Action" by J. E. Kaiser, R. F. Berg, and M. A. Caputo.
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