TIF21-32-41

Information Engineering Senior Project

Proyek Senior Teknologi Informasi

BASIC INFORMATION

Course Credit	2 / 100 minutes per Week
Course Type	Required
Course Classification	Engineering Topics
Prerequisites	Junior Project, Cloud Computing, Computer Network, Artificial Intelligence, Integration Application and Information

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Development of Engineering Solution (b)   Modern Tools Utilization (e)

Engineering Design (c)

Learning Outcomes

LO1 Students are able to understand the challenge in modern computing environment and how computer networks, cloud, and AI can help .

LO2 Students are able to apply knowledge on computer network, cloud, and AI as modern computing platform

LO3 Students are able to design a platform solution that deployed distributedly in cloud computing environment.

LO4 Students are able to utilize modern tools to plan, to design, and to deploy computing platform blueprint that high available, high performance, and resillince.

COURSE DESCRIPTION

This course is a second level of project based learning in information engineering study program. The course aims to simulate the real world need in modern computing platform in distributive and massive scale. The student will be guided to plan, to design, to simulate, and to deploy the computing platform. On

this project, the student will create a computing environment based on cloud computing technology. They should configure the networks and the security platform to make sure the platform has high availibility. The student will use engineering design method to select and to propose the solution based on the existing platform in the cloud. The student will deploy ready to use solution that utilize the cloud platform and AI.

TOPICS

1. Explaining project based case study (Cloud Computing Lab)
2. Designing cloud architecture platform (Cloud Computing Lab)
3. Creating cloud automate platform (Cloud Computing Lab)
4. Deploying Cloud computing Infrastructure as a services (Cloud Computing Lab)
5. Validating and Presenting the Solution (Cloud Computing Lab)
6. Configuring network configuration and solution (Computer Network Lab)
7. Configuring firewall and security for the cloud solution (Computer Network Lab)
8. Configuring web application access (HTTP) and and others (Computer Network Lab)
9. Penetration Testing for The Solution (Computer Network Lab)
10. Deploying machine learning solution in Virtual Machine (AI Lab)
11. Deploying cognitive services / AI (AI Lab)
12. Consuming and Testing AI solution (AI Lab)
13. Integrating AI solution with the proposed solution (AI Lab)
14. Final solution and final project presentation (Cloud Computing Platform)
15. Final solution and final project presentation (Computer Network Lab)
16. Final solution and final project presentation (AI Lab)

REFERENCES

[1] Ferdiana, Ridi, *Engineering Design pada Sistem Informasi*, UGM Press, 2021.

[2] Warsun, Najib, *Modul Praktikum Jaringan Komputer*, Departemen Teknik Elektro dan Teknologi Informasi, 2021.

[3] Ferdiana, Ridi., *Solusi Cloud Computing dengan Microsoft Azure bagi UMKM*, Elex Media Komputindo, 2016.

[4] AWS Academy, *Data analytics and AI*, Amazon, 2021.