Module Description

Module name	Specific Topic In Internet Of Things
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12143203
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	7th
Person responsible for the module	Adnan., ST., MT., PhD
Lecturer	Adnan., ST., MT., PhD
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is an elective course and offered in the 7th semester.
Type of teaching, contact hours	Teaching methods: [case study], [project-based learning]. Teaching forms: [lecture], [tutorial], [seminar], [practicum], [research]. CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consist of: - 68 hours for lecture, - 34 hours for structured assignments, - 34 hours for self study
Credit points	3 credit points (equivalent with 5.1 ECTS)
Requirements according to the examination	Students have participated in at least 80% of the learning activities (Academic Regulations, Chapter VII)

regulations	
Recommended prerequisites	Computer network, Basics of Computer Programming
Module objectives/intended learning outcomes	After completing the course, Students are able: to implement an IoT project case
	Intended Learning Outcomes (ILO):
	ILO 1 :
	Have the knowledge of fundamental in Computing Science that includes basic theory and concepts of computer science, Mathematics and Statistics, Programming Algorithm, Software Engineering, Information Management and Digital Resilience, also the advance topics of either Artificial Intelligence, Data Science, Computer Network, Cloud Computing or Internet of Things.
	ILO 4 :
	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements by applying computer science theory and software development fundamentals.
	ILO 7:
	Perform a logical systematic procedure to solve problems, then communicate their ideas in a convincing and effective manner, either in written or orally, to propose solutions.
	Course Learning Objective (CLO):
	After following Special Topics in Internet Of Things Course for one semester, students are expected to be able to develop and Implement IoT based Systems.
	Sub CLO :
	ILO 1 => CLO 1 : Understand various Application Layer of Internet services and IoT concepts as Application layer services
	ILO 4 => CLO 2 : Implement IoT based System
	ILO 7 => CLO 3 : Performs slides presentation to communicate an IoT Project implementation.
Content	Students will learn about :
	1. Concepts of Internet of Things
	2. Various Internet services & Protocol of Application Layer
	3. Cloud, Edge, and Fog Computing
	4. Sensors, Microcontroller, and Single Board Computer

	5. IoT Architecture & Protocols 6. Iot Connectivity 7. IoT Cloud & Services 8. Project presentation
Forms of Assessment	Assessment is carried out based on written examinations, assessment / evaluation of the learning process and performance with the following components: CLO 1 → ILO 1 : 25% Observation CLO 2 → ILO 4 : 50% observation CLO 3 → ILO 7 : 25% Observation
Study and examination requirements and forms of examination	**Study and examination requirements:** - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. **Form of examination:** Oral Exam
Media employed	Video conference, slide presentation, Learning Management System (LMS).
Reading list	**Main :** Sudip Mira, Anandang Mukherjee, Arijit Roy," Introduction to IoT". Cambridge University Press. **Support :** Derek Molloy. "Exploring Raspberry Pi: Interfacing to the Real World with Embedded Linux." Willey. https://docs.espressif.com/projects/esp-idf/en/latest/esp32/