Module Description

Module name	Web Engineering
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12142403
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	7th
Person responsible for the module	Dr. Ir. Amil Ahmad Ilham, S.T., M.IT.
Lecturer	1. Dr. Ir. Amil Ahmad Ilham, S.T., M.IT. 2. Iqra' Aswad, S.T., M.T
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: [group discussion], [simulation], [collaborative learning], [problem-based learning]. Teaching forms: [lecture], [tutoria], [practicum]. CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit points	3 credit points (equivalent with 5.1 ECTS)

Requirements according to the examination regulations	Students must have attended all minimum 80% of classes and submitted all assignments before the final exam.
Recommended prerequisites	Web-based Programming
Module objectives/intended learning outcomes	After completing the course, Students are able: **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 6 :** Perform effectively in a team, either as a member or leader, in activities related to the program's discipline. **Course Learning Objective (CLO):** After completing this course, students should be able to understand the basic concepts of internet communication and web programming and create a web application using HTML, CSS, and JavaScript. **Sub CLO :** ILO 1 ⇒ CLO 1 : Students should be able to understand the Concept of Web Engineering and design methodologies of web application.. ILO 4 ⇒ CLO 2 : Students should be able to develop a web application based on web engineering methods and techniques. ILO 6 ⇒ CLO 3 : Students should be able to complete the group project assignment, meet a given set of requirements and present the result to the lecturer and other students.

Content	Students will learn about : 1. Introduction to Web Engineering 2. Application Design Principles & Methodologies 3. Software Development LifeCycle 4. Web Application Testing 5. Application Integration using Web Service 6. RESTful Web Service 7. Microservices
Forms of Assessment	Assessment techniques: [observation], [participation], [written test]. Assessment forms: [final term exam], [assignment], [presentation]. Final term exam = 40%, Assignment = 50%, Presentation = 10% CLO 1 => ILO 1: 40% (Final term exam: written test) CLO 2 => ILO 4: 50% (Assignment: participation) CLO 3 => ILO 7: 10% (Presentation: 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. - Students must attend the exam to get a final grade. **Form of examination:** Written exam: Essay and Multiple choice question answer
Media employed	Video conference, slide presentation, Learning Management System (LMS).
Reading list	**Main :** 1. Web Engineering: A Practitioner's Approach by Roger S. Pressman and David Lowe 2. Software Architecture in Practice by Len Bass, Paul Clements, and Rick Kazmann 3. Design Research in Information Systems by Alan Hevner and Samir Chatterjee 4. Service-Oriented Architecture by Thomas Erl 5. RESTful Web Services by Leonard Richardson and Sam Ruby 6. Building Microservices by Sam Newman