UNIVERSITAS MATARAM

(University of Mataram)

FAKULTAS TEKNIK

(Faculty of Engineering)

PROGRAM STUDI TEKNIK INFORMATIKA

(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Advanced Web Programming (D18KB002)

Module designation	Advanced Web Programming
Semester(s) in which the module is taught	*5 / third year*
Person responsible for the module	*Ahmad Zafrullah Mardiansyah, S.T., M.Eng.*
Language	*Indonesian*
Relation to curriculum	*Compulsory*
Teaching methods	*Lectures, Discussions, Project*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation ● 2 x 50 minutes lecturer/week ● 2 x 60 minutes class exercise/week ● Self Study hours = 120 minutes/week Total workload 340 minutes/week
Credit points	*2 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	*Web Programming*

Module objectives/intended learning outcomes	1) Traditional and Modern Web a. Evolution b. Focus c. Content d. Design e. Size f. Platform g. Management h. Cost 2) Modern Web Development Tools a. Overview client and server b. NodeJS c. Node package manager d. EcmaScript 3) Project Starter a. Viewport b. Responsive c. Media query d. Breakpoint e. Grid layout 4) Progressize Web Apps a. Karakteristik b. Implementasi c. Kelebihan dan kekurangan d. Komponen e. Application shell f. URL router g. Data from API h. Web app manifest i. Service worker j. Cache API k. IndexedDB l. WebSocket m. Notification 5) Test Driven Development a. End to end testing 6) Web Performance a. Introduction b. Web vitals c. Image compression d. Image responzive e. WebP image f. Lazy loading g. Bundle optimization h. Bundle analyzer a. Code splitting

Content	The Advanced Web Programming course provides an understanding and mastery of the concepts of Modern Web Development, Single Page Application (SPA), Test Driven Development (TDD), and Web Performance. The concept of SPA becomes a new type of web that is more interactive and adapts quickly both in terms of client and server, then TDD ensures the integrity and functionality of web application services.
Examination forms	*Assignments, Quiz, Simulation, Project (Oral Presentation)*
Study and examination requirements	*Assignements 10%,* *Quiz 25%,* *Simulation 25%,* *Project 40%*
Reading list	1. R. C. Martin, Clean code: a handbook of agile software craftsmanship. Upper Saddle River etc.: Prentice Hall, 2009. 2. Remotivi, 4 Prinsip Aksesibilitas Website, 09-Jul-2019. https://youtu.be/U3mgxQweDMc 3. WebAIM, "WebAIM's WCAG 2 Checklist," WebAIM, 26-Feb-2021. https://webaim.org/standards/wcag/checklist#sc2.1.1 4. MDN, "Web technology for developers," Accessibility | MDN. https://developer.mozilla.org/en-US/docs/Web/Accessibility/An_overview_of_accessible_web_applications_and_widgets 5. WebAIM, "Alternative Text," WebAIM, 14-Oct-2019. https://webaim.org/techniques/alttext/ 6. R. McDermott, "ryanmcdermott/clean-code-javascript," Github. https://github.com/ryanmcdermott/clean-code-javascript