

Course Code	TKIE162103P									
Course Name	Digital and Microprocessor Labworks									
Course Instructors	Addin Suwastono, Sujoko Sumaryono, Agus Bedjo									
Course Type	Required									
Course Classification	Engineering Topics									
Credit / Contact Hour per Week	1 / 50 minutes per Week									
Course Description	In this Lab Work the students learn about several implementation devices for digital circuits and basic microprocessor programming									
Prerequisites Courses	Digital Techniques (TKIE161204) Microprocessor System (TKIE162103)									
Covered Student Outcome	Engineering Design (c) Modern Tools Utilization (e) Multidisciplinary Teamwork (h)									
Learning Outcome	<ol style="list-style-type: none"> 1. Students understands the basic of digital circuit and microprocessor and its implementation 2. Students are able to design an experimental digital and microprocessor device 3. Students are able to collaborate and peer-debug problems in digital circuit and microprocessor system 									
Topic	<ol style="list-style-type: none"> 1. Nuvoton Input-Output 2. Nuvoton (PWM) 3. Nuvoton (ADC) 4. Arduino (Pengendalian Motor DC) 5. Arduino (LCD) 6. Arduino (Motor Servo) 7. Logika Kombinatorial 1 (AND, NAND, OR, ADDER) 8. Logika Kombinatorial 2 (Dekoder, Enkoder) 									
Direct Asessment	<table border="1"> <thead> <tr> <th>Direct Asessment Plan</th> <th>Measured Learning Outcome</th> </tr> </thead> <tbody> <tr> <td>Lab Work Report</td> <td>LO1 LO2 LO3</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Direct Asessment Plan	Measured Learning Outcome	Lab Work Report	LO1 LO2 LO3				
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Lab Work Report	LO1 LO2 LO3									
Indirect Assesment	Questionnaire (EDOM)									
References	<p>[1] John F. Wakerly, 2002, Digital Design Principles and Practices, 7 ed, Prentice-Hall International</p> <p>[2] Anil K. Maini, Digital Electronics Principles, Devices and Applications, 2007, Prentice-Hall International.</p> <p>[3] Ronald J. Tocci and Neal S. Widmer, 1998, Digital Systems Priciples and Applications, Prentice-Hall, Inc</p> <p>[4] Moris Mano, M. and Michael D. Ciletti, 2013, Digital Design With an Intruduction to the Verilog HDL, fifth ed. Pearson Education, Inc., publishing as Prentice Hall, One Lake Street, Upper Saddle River, New Jersey 07458</p>									