

Course Code	TKEE162206P											
Course Name	Instrumentation and Control Lab Work											
Course Instructors	Priyatmadi, Samiadji Herdjunanto, Oyas Wahyuanggoro, Adha Imam Cahyadi											
Course Type	Required											
Course Classification	Engineering Topics											
Credit / Contact Hour per Week	1 / 150 minutes per Week											
Course Description	This course introduce students to measurement and control instrument commonly used in the industry											
Prerequisites Courses	Measurement and Instrumentation (TKEE162205) Control Engineering(TKEE162206)											
<b>Covered Student Outcome</b>	<b>Engineering Design (c)</b> <b>Data and Experiment (d)</b> <b>Multidisciplinary Teamwork (h)</b>											
Learning Outcome	<ol style="list-style-type: none"> <li>1. Students are able to demonstrate understanding of the basic instrumentation and control principle underlying the actual industrial control and instrumentation devices</li> <li>2. Students are able to design instrumentation experiments using the current industrial grade devices</li> <li>3. Students are able to work in a team to carry out control and instrumentation experiments</li> </ol>											
Topic	<ol style="list-style-type: none"> <li>1. QNET Mechkit</li> <li>2. PLC OMRON Pengendali Lift</li> <li>3. Motor DC Servo</li> <li>4. ELVIS Introduction</li> <li>5. PLC OMRON Pengendali Traffic Light</li> <li>6. Desain Kendali dengan NI Labview</li> </ol>											
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>Pretest</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	Pretest	LO1 LO2 LO3				
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Indirect Assesment	Questionnaire (EDOM)											
References	<p>[1] N.S. Nise, <i>Control System Engineering</i>, Hoboken, NJ: John Wiley &amp; Sons Ltd., 2004.</p> <p>[2] J. Jacob, <i>Industrial Control Electronics</i>, Englewood Cliffs, NJ.: Prentice-Hall International Editions, 1989.</p> <p>[3] M. Jamshidi and M. Zavarei, <i>Linear Control Systems : A Computer-Aided Approach.</i>, Great Britain: Wheaton &amp; Co.Ltd., 1986.</p> <p>[4] Ogata, Katsuhiko, and Yanjuan Yang. <i>Modern control engineering</i>. Vol. 5. Upper Saddle River, NJ, USA: Prentice Hall, 2002.</p>											