

## Modul Description

<b>Module name</b>	Course Module
<b>Module level, if applicable</b>	Bachelor of Electronics Engineering
<b>Code, if applicable</b>	5215-078-3
<b>Subtitle, if applicable</b>	-
<b>Course, if applicable</b>	PLC and Distributed Control System
<b>Semester(s) in which the module istaught</b>	VI
<b>Person responsible for the module</b>	Lecturer of Courses
<b>Lecturer</b>	Rafiuddin Syam, ST, M.Eng, Ph.D
<b>Language</b>	Indonesian Language [Bahasa Indonesia]
<b>Relation to Curriculum</b>	This course is a mandatory course for Control Electronics Specialization and offered in the 6 <sup>th</sup> semester.
<b>Type of teaching, contact hours</b>	<p>Teaching methods used in this course are:</p> <ul style="list-style-type: none"> <li>- Lecture (i.e., group investigation, small group discussion, case study, and video-based learning)</li> <li>- Structured assignments (i.e., essays and case study)</li> <li>- Practice (i.e., computer simulation and case study in laboratorium)</li> </ul> <p>The class size for lecture is 30 students. Contact hours for lecture is 27 hours, assignments are 32 hours</p>
<b>Workload</b>	<p>For this course, students required to meet a minimum of 91 hours in one semester, which consist of:</p> <ul style="list-style-type: none"> <li>- 27 hours for lecture,</li> <li>- 32 hours for structured assignments,</li> <li>- 32 hours for private study</li> </ul>
<b>Credit points</b>	2 credit points (equivalent with 3.00 ECTS)
<b>Requirements according to the examination regulations</b>	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.
<b>Recommended prerequisites</b>	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.

<p><b>Module objectives/intended learning outcomes</b></p>	<p>After completing the course and given with this case:</p> <p><b>Course Learning Objectives (CLO1):</b> Mahasiswa mampu memahami penggunaan PLC (K2) (15)</p> <p><b>Course Learning Objectives (CLO2):</b> Mahasiswa mampu memahami sistem kendali terdistribusi (Distributed Control System/DCS) (K2) (15)</p> <p><b>Course Learning Objectives (CLO3):</b> Mahasiswa mampu mengaplikasikan sistem kendali terdistribusi pada proses produksi industri (K2, S1, S3, C1) (70)</p> <p><b>Program Learning Outcome (PLO3):</b> Menerapkan kompetensi teknik elektronika untuk memecahkan masalah keteknikan</p> <p><b>Knowledge (K2):</b> Untuk menerapkan prinsip-prinsip teknik elektronika untuk memecahkan masalah dalam sistem teknik elektronika</p> <p><b>Engineering and Education Skill (S1):</b> Mampu merancang prinsip dan aplikasi sistem rekayasa elektronika</p> <p><b>Engineering and Education Skill (S3):</b> Mampu mencari alternatif solusi dan pemecahan masalah di bidang teknik elektronika.</p> <p><b>Competence (C1):</b> Menerapkan teknologi baru di bidang rekayasa dengan mempertimbangkan standar teknis, aspek kinerja, keandalan, penerapan, dan keberlanjutan</p>
<p><b>Content</b></p>	<p><b>Students will learn about:</b> Mata kuliah ini mempelajari penggunaan PLC dan Sistem kendali Terdistribusi (Distributed Control System/DCS). Materi perkuliahan mata kuliah ini mencakup pengantar PLC dan DCS, Perangkat keras PLC dan penggunaannya, Pemrograman PLC menggunakan Grafik Ladder Diagram dan bahasa Rakitan (Assembler) serta aplikasinya pada proses produksi industri, komunikasi data komputer dengan PLC, Sistem Kendali Terdistribusi dan aplikasinya.</p>
<p><b>Forms of Assessment</b></p>	<p>Assessment is carried out based on written examinations, assessment/evaluation of the learning process and performance with the following components: Presence and Activity: 10%; Structured tasks: 20%; Mid Test: 30%; Final Test: 40%</p>

<b>Study and examination requirements and forms of examination</b>	<b>Study and examination requirements:</b> <ul style="list-style-type: none"> <li>- Students must attend 15 minutes before the class starts.</li> <li>- Students must switch off all electronic devices.</li> <li>- Students must inform the lecturer if they will not attend the class due to sickness, etc.</li> <li>- Students must submit all class assignments before the deadline.</li> <li>- Students must attend the exam to get final grade.</li> </ul> <b>Form of examination:</b> Written exam: Essay
<b>Media employed</b>	Direct Whiteboard and Power Point Presentation.
<b>Reading list</b>	