UNIVERSITAS GADJAH MADA
Faculty of Mathematics and Natural Sciences
Department of Computer Science and Electronics
Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 546194 Email: dep-ike.mipa@ugm.ac.id Website: http://dcse.fmipa.ugm.ac.id

Bachelor in Electronics and Instrumentation
Telp : +62 274 546194
Email : kaprodi-s1-elins.mipa@ugm.ac.id
Website : http://dcse.ugm.ac.id/

MODULE HANDBOOK

Module name	**Practicum of Programmable Logic Controller**
Module level	Undergraduate
Code	MII 2315
Courses (if applicable)	Programmable Logic Controller
Semester	Even (Genap)
Contact person	Aufaclav Zatu Kusuma Frisky, M. Sc
Lecturer	1. Aufaclav Zatu Kusuma Frisky, M. Sc
Language	Bahasa Indonesia/English
Relation to curriculum	1. Undergraduate degree program, elective, 5th semester. 2. International undergraduate program, elective, 5th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 30 students.
Workload	1. Practicums: 11 x 50 = 600 minutes 2. Case Study: 1 x 50 = 50 minutes per week. 3. Final Exam: 1 x 50 = 50 minutes per week.
Credit points	1 credit point (sks).
Requirements according to the Examination regulations	A student must have attended at least 70% of the lectures to sit in the exams.
Recommended prerequisites	Computer programming skill
Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: CO1 Understand and understand the concept of process control systems, ladder diagram programming principles in general, PLC, HMI, basic concepts of interfaces and PLC operations CO2 Able and competent to apply the basic principles as well practical implementation of a PLC, covering the system concept process control and PLC

PLO	CO1		CO2
Program Learning Outcome (PLO)	PLO2	√	
	PLO3		√

<table>
<tr><td></td><td></td></tr>
<tr><td>Contents</td><td>1. Omron and CXONE PLC Basic Instruction Programming Tutorial 1
2. Advanced Instruction Tutorial, HMI NB5 Series, NB-Designer, and Nirtec Machine Simulator 1
3. Apple Packing Application 1
4. Application Distribution Box 1
5. Elevator Application 1
6. Gantry System Application 1
7. Mixer Application 1
8. Application Solder Line 1
9. Traffic Light Control Application 1
10. Case Study I 1
11. Response 1
12. Assessment Plan</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>The evaluation is planned in 3 forms, namely:
1. Practicum, either midterm or end of term test,
2. Individual assignments to be completed within a certain timeframe, and
3. Final examination
Assessment is done using benchmark assessment, with the aim of measuring the level of student understanding related to the target and class rank.</td></tr>
<tr><td>Media employed</td><td>LCD, blackboard, and websites.</td></tr>
<tr><td>Assessments and Evaluation</td><td><table>
<tr><th>Type</th><th>Percentage</th><th>CO2</th><th>CO3</th></tr>
<tr><td>Practicum</td><td>45 %</td><td>√</td><td>√</td></tr>
<tr><td>Report</td><td>30 %</td><td>√</td><td></td></tr>
<tr><td>Case Study</td><td>10 %</td><td></td><td>√</td></tr>
<tr><td>Final Exam</td><td>15 %</td><td></td><td>√</td></tr>
<tr><td>Total</td><td>100%</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Reading List</td><td>1. Anonim, Omron PLC Beginner Guide, [online] http://riwaldi_pudja.staff.gunadarma.ac.id/Downloads/files/33350/PLC+Beginner+guide.pdf
2. Putra, Agfianto Eko, 2004, “PLC: Konsep, Pemrograman dan Aplikasi (Omron CPM1A/CPM2A dan ZEN Programmable Relay)”, Graha Ilmu, Yogyakarta.
3. Hackworth, John R. & Frederick D., PLC Programming Methods, e-book.</td></tr>
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