

Modul Description

Module name	Course Module
Module level, if applicable	Bachelor of Electronics Engineering
Code, if applicable	5215-079-3
Subtitle, if applicable	-
Course, if applicable	Microcontroller System
Semester(s) in which the module istaught	VI
Person responsible for the module	Lecturer of Courses
Lecturer	Dr. Muhammad Yusro, M.Pd, MT.
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a mandatory course for Control Electronics Specialization and offered in the 6 th semester.
Type of teaching, contact hours	<p>Teaching methods used in this course are:</p> <ul style="list-style-type: none"> - Lecture (i.e., group investigation, small group discussion, case study, and video-based learning) - Structured assignments (i.e., essays and case study) - Practice (i.e., computer simulation and case study in laboratorium) <p>The class size for lecture is 30 students. Contact hours for lecture is 27 hours, assignments are 32 hours</p>
Workload	<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"> - 27 hours for lecture, - 32 hours for structured assignments, - 32 hours for private study,
Credit points	2 credit points (equivalent with 2.88 ECTS)
Requirements according to the examination regulations	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.
Recommended prerequisites	Students must have attended all classes and submitted all class assignments that are scheduled before the final tests.

<p>PLO-CLO-ILO</p>	<p>After completing the course and given with this case:</p> <p>Course Learning Objectives (CLO1): Mahasiswa mampu memahami dasar-dasar, karakteristik, cara kerja, perangkat keras dan perangkat lunak komponen-komponen utama sistem mikrokontroler (K1) (30)</p> <p>Course Learning Objectives (CLO2): Mahasiswa mampu merancang aplikasi sederhana berbasis mikrokontroler (K2, S1, S3, C1) (70)</p> <p>Program Learning Outcome (PLO3): Menerapkan kompetensi teknik elektronika untuk memecahkan masalah keteknikan</p> <p>Knowledge (K1): Menerapkan matematika, ilmu dasar dan teknik dasar untuk merancang dan menganalisis untuk memecahkan masalah di bidang teknik elektronika.</p> <p>Knowledge (K2): Untuk menerapkan prinsip-prinsip teknik elektronik untuk memecahkan masalah dalam sistem teknik elektronik</p> <p>Engineering and Education Skill (S1): Mampu merancang prinsip dan aplikasi sistem rekayasa elektronik</p> <p>Engineering and Education Skill (S3): Mampu mencari alternatif solusi dan pemecahan masalah di bidang teknik elektronika.</p> <p>Competence (C1): Menerapkan teknologi baru di bidang rekayasa dengan mempertimbangkan standar teknis, aspek kinerja, keandalan, penerapan, dan keberlanjutan</p>
<p>Content</p>	<p>Students will learn about: Mata kuliah ini membahas tentang pengertian mikrokontroler, perbedaan antara mikroprosesor dan mikrokontroler, arsitektur mikrokontroler, perangkat set instruksi, sistem minimum mikrokontroler, sistem antarmuka, dasar pemrograman, aplikasi sederhana sistem mikrokontroler menggunakan Arduino board dan Raspberry Pi board.</p>
<p>Forms of Assessment</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: 5%; Structured tasks: 70%; Mid Test: 5%; Final Test: 20%</p>

Study and examination requirements and forms of examination	Study and examination requirements: <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get final grade. Form of examination: Written exam: Essay
Media employed	Direct Whiteboard and Power Point Presentation.
Reading list	<ol style="list-style-type: none"> 1. Abdul Kadir (2018). Arduino dan Sensor. Penerbit Andi, Yogyakarta. ISBN: 978-979-29-6670-1. 2. Abdul Kadir (2017). Dasar Raspberry Pi. Penerbit Andi, Yogyakarta. ISBN: 978-979-29-5811-9. 3. John Crisp (2004). Introduction Microprocessors and Microcontrollers (2nd Edition). an imprint of Elsevier, ISBN: 0-7506-5989-0. 4. Michael Margolis (2011). Arduino Cookbook, Published by O'Reilly Media, Inc., ISBN: 978-0-596-80247-9. 5. Muhammad Yusro, dkk (2021). Modul Teori dan Praktik Aplikasi IoT Menggunakan ESP32 Board.