

Modul Description

Module name	Course Module
Module level, if applicable	Bachelor of Electronics Engineering
Code, if applicable	5215-049-2
Subtitle, if applicable	-
Course, if applicable	Power Electronics
Semester(s) in which the module is taught	VII
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 7 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-ILO-CLO</p>	<p>After completing the course and given with this case:</p> <p>Course Learning Objectives (CLO1): Mahasiswa mampu memahami rangkaian elektronika sebagai pengatur daya (K1) (30)</p> <p>Course Learning Objectives (CLO2): Mahasiswa mampu menganalisis rangkaian elektronika sebagai pengatur daya (K1, S2, S3, C1)</p> <p>Course Learning Objectives (CLO3): Mahasiswa mampu merancang rangkaian elektronika sebagai pengatur daya (K2, S1, S3, C1)</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 (S2): Mampu menganalisis prinsip kerja dan penerapan 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 pengertian elektronika daya, komponen elektronika daya, konsep dan terminologi pada rangkaian elektronika daya, konsep sistem konverter daya, sistem rangkaian konverter AC ke DC (rectifier), sistem rangkaian konverter DC ke DC (chopper), sistem rangkaian DC ke AC (inverter), sistem rangkaian konverter AC ke AC, dan sistem proteksi daya</p>

Forms of Assessment	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%
Study and examination requirements and forms of examination	<p>Study and examination requirements:</p> <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. <p>Form of examination: Written exam: Essay</p>
Media employed	Direct Whiteboard and Power Point Presentation.
Reading list	<ol style="list-style-type: none"> 1. Denis Fewson (1998). Introduction to Power Electronics. Oxford University Press, Inc. 2. M.H. Rashid (1993). Power Electronics: Circuits, Devices, and Applications, 2nd Editions. Prentice Hall International Inc. 3. Mochamad Ashari (2017). Desain Konverter Elektronika Daya. Penerbit Informatika. 4. Mohan, Underland, Robbins, (1994). Power Electronic; Converter, Applications, and Design. John Wiley & Sons, Singapore. 5. Zuhail (2020). Dasar Teknik Listrik dan Elektronika Daya. PT Gramedia Utama.