

Mata Kuliah Course	Nama MK <i>Name</i>	: Distribusi Tenaga Listrik : <i>Electric Power Distribution</i>
	Kode MK <i>Code</i>	: EE184614
	Kredit <i>Credits</i>	: 3 sks
	Semester <i>Semester</i>	: VI (Wajib) : <i>VI (Compulsory)</i>
	Beban Belajar <i>Workload</i>	: Kuliah : 3 x 50 = 150 menit/minggu Latihan/tugas : 3 x 60 = 180 menit/minggu Belajar mandiri : 3 x 60 = 180 menit/minggu : <i>Lectures : 3 x 50 = 150 min/week</i> <i>Exercises/Assignments : 3 x 60 = 180 min/week</i> <i>Self learning : 3 x 60 = 180 min/week</i>
	Tingkatan <i>Module Level</i>	: Sarjana (S1) : <i>Undergraduate</i>
	Penanggung Jawab <i>PIC</i>	: Dr. Dimas Fajar Uman Putra, ST, MT
	Pengajar <i>Lecturer</i>	: Dr. Dimas Fajar Uman Putra, ST, MT
	Bahasa <i>Language</i>	: Bahasa Indonesia dan Bahasa Inggris : <i>Bahasa Indonesia and English</i>
	Persyaratan dan Peraturan <i>Requirement and Regulation</i>	: Setiap mahasiswa harus menghadiri setidaknya 75% dari jumlah perkuliahan untuk dapat mengikuti ujian : <i>A student must have attended at least 75% of the lectures to sit in the exams</i>

Deskripsi Mata Kuliah

Description of Course

Mata Kuliah Distribusi Tenaga Listrik adalah mata kuliah yang mempelajari dan membahas desain sistem distribusi tenaga listrik baik distribusi primer maupun sekunder, dan permasalahan pada sistem distribusi listrik yang meliputi operasi, stabilitas tegangan, dan rugi - rugi pada sistem tenaga listrik.

Electric Power Distribution discusses basic concepts, design of electric power distribution systems both primary and secondary distribution, and problems in the electricity distribution system that includes operation, voltage stability, and losses in the electric power system.

CPL Prodi yang Dibebankan

Learning Outcomes

(CPL-01) Mampu menerapkan ilmu pengetahuan alam dan matematika pada bidang teknik elektro
(PLO-1) *Capable to apply knowledge of natural sciences and mathematics to solve electrical engineering problem*

(CPL-05) Mampu mengidentifikasi, memformulasikan dan menyelesaikan permasalahan dibidang teknik elektro

(PLO-5) Capable to identify, formulate and solve problems in the field of electrical engineering

(CPL-11) Mampu menerapkan metode, ICT, dan perangkat modern dalam penyelesaian permasalahan dibidang teknik elektro

(PLO-11) Capable to apply methods, ICT, and modern devices in solving problems in the field of electrical engineering

Capaian Pembelajaran Mata Kuliah

Course Learning Outcomes

(CPMK-01) Menguasai konsep desain Distribusi Tenaga Listrik beserta pengenalan peralatan di Gardu Induk dan Jaringan Distribusi Primer maupun Sekunder, menganalisis permasalahan pada system distribusi listrik yang meliputi operasi, stabilitas tegangan, dan rugi-rugi sistem tenaga listrik.

(CLO-01) Mastering the design concept of Electric Power Distribution along with the introduction of equipment in Primary and Secondary Distribution Substations and Networks, analyzing problems in the electricity distribution system which includes operations, voltage stability, and losses of electric power systems.

(CPMK-02) Mampu mengenal peralatan Gardu Induk dan Jaringan Distribusi Primer dan Sekunder dan prinsip kerjanya, mengenalkan prinsip proteksi jaringan distribusi, mengetahui drop tegangan dan rugi-rugi jaringan, memperbaiki power faktor serta menganalisis keandalan sistem distribusi.

(CLO-02) Able to recognize the equipment of Primary and Secondary Distribution Networks and Distribution Working Principles, introduce the principles of distribution network protection, know the voltage drop and network losses, improve power factors and analyze the distribution system reliability.

(CPMK-03) Mampu mengambil keputusan terhadap pemilihan komponen peralatan Gardu induk dan Jaringan Distribusi Tenaga Listrik, merencanakan dan menganalisis sistem distribusi tenaga listrik.

(CLO-03) Able to make decisions on the selection of equipment components Substation and Electric Power Distribution Network, plan and analyze the electric power distribution system.

(CPMK-04) Mampu bertanggung jawab atas hasil kerja, baik secara individu maupun kelompok.

(CLO-04) Having responsibility in work, both individually and groups.

Topik/Pokok Bahasan

Main Subjects

1. Review System Tenaga Listrik
Review of the Electric Power System
2. Jaringan Transmisi
Transmission Network
3. Gardu Induk Distribusi dan Perlengkapannya
Distribution Substation and Equipment
4. Jaringan Distribusi Primer dan Sekunder
Primary and Secondary Distribution Networks
5. Perhitungan Drop tegangan, rugi-rugi jaringan dan power faktor di jaringan
Calculation of voltage drop, network losses and power factor in the network
6. Proteksi jaringan

Network protection

7. Keandalan system distribusi

Reliability of distribution systems

Pembelajaran dan ujian

Study and examination

- Latihan di kelas
In-class exercises
- Tugas 1, 2, 3
Assignment 1, 2, 3
- Ujian tengah semester
Mid-term examination
- Ujian akhir semester
Final examination

Pustaka

Reference(s)

- [1] Turan Gonen, Electric Power Distribution System Engineering
- [2] Westinghouse Electric Corporation, Distribution Systems
- [3] Irwin Lazar, Sistem Kelistrikan Industri (*Electrical Systems Analysis and Design for Industrial Plants*)
- [4] Electric Power Distribution Handbook, T.A. Short

Prasyarat

Prerequisite(s)

- EW184003 Rangkaian Listrik
EW184003 Electrical Circuit
- EE184402 Dasar Sistem Tenaga Listrik
EE184402 Introduction to Power System