



INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS
DEPARTEMEN TEKNIK ELEKTRO
Program Studi Sarjana (S1) Teknik Elektro

INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FACULTY OF INTELLIGENT ELECTRICAL & INFORMATICS TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
Bachelor Degree Program in Electrical Engineering

1	Nama Mata Kuliah / Course Name : Instalasi Tenaga Listrik / Electrical System Installation
2	Kode Mata Kuliah / Course Code : EE234716
3	Kredit / Credits : 3 SKS
4	Semester / Semester : 0

Deskripsi Mata Kuliah / Course Description

Capaian Pembelajaran Lulusan (CPL) Yang Dibebankan Mata Kuliah / Program Learning Outcomes Charged to The Course

- CPL 1 Mampu menunjukkan sikap dan karakter yang mencerminkan: ketakwaan kepada Tuhan Yang Maha Esa, etika dan integritas, berbudi pekerti luhur, peka dan peduli terhadap masalah sosial dan lingkungan, menghargai perbedaan budaya dan kemajemukan, menjunjung tinggi penegakan hukum mendahulukan kepentingan bangsa dan masyarakat luas, melalui kreatifitas dan inovasi, ekselensi, kepemimpinan yang kuat, sinergi, dan potensi lain yang dimiliki untuk mencapai hasil yang maksimal / *Being able to demonstrate attitudes and characteristics that reflect: devotion to the One Almighty God, ethics and integrity, noble virtues, sensitivity and care towards social and environmental issues, appreciation of cultural diversity and inclusivity, upholding the rule of law with a priority on the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.*
- CPL 5 Mampu mendesain komponen, sistem, dan proses yang logis dan realistis sesuai dengan spesifikasi yang ditentukan dengan mempertimbangkan aspek keselamatan, sosial, budaya, lingkungan, dan ekonomi / *Able to design components, systems, and processes that are logical and realistic in accordance*

with specified specifications, while considering safety, social, cultural, environmental, and economic aspects.

CPL 6 Mampu mengkaji dan memanfaatkan matematika, ilmu pengetahuan alam dan teknologi serta mengidentifikasi, memformulasikan dan menyelesaikan permasalahan di bidang teknik elektro / *Able to evaluate and utilize mathematics, natural sciences, and technology, as well as identify, formulate, and solve problems in the field of electrical engineering.*

Capaian Pembelajaran Mata Kuliah / Course Learning Outcomes

1. Mampu menjelaskan konsep dasar Peraturan dan Standart yang berlaku sebagai acuan perencanaan Instalasi Tenaga Listrik / *Able to explain the fundamental concepts of Regulations and Standards that serve as references for the planning of Electrical Power Installations.*
2. Mampu mengidentifikasi bentuk-bentuk plan sebagai dasar perencanaan distribusi dan instalasi tenaga listrik / *Able to identify various types of plans as the basis for electrical distribution and installation planning.*
3. Mampu menghitung kebutuhan instalasi listrik / *Able to calculate the electrical installation requirements.*
4. Mampu mendesain instalasi tenaga listrik. / *Able to design electrical power installations.*

Pokok Bahasan / Contents

1. PUIL 2011 dan standar Instalasi / *Electrical Installation Regulations (PUIL) 2011 and Installation Standards*
2. Peraturan Pemerintah dan Daerah berkaitan dengan Instalasi Tenaga Listrik / *Government and Local Regulations Related to Electrical Installations*
3. Implementasi Instalasi Tenaga Listrik diberbagai plant (Simple Building, High Risk Building, Industri, Pelabuhan, dll) / *Implementation of Electrical Installations in Various Facilities (Simple Buildings, High-Risk Buildings, Industrial Facilities, Ports, etc.)*
4. Spesifikasi peralatan listrik (Kubikal, Transformator, Genset, ATS, AMF, UPS, Kabel, breaker, SPD, ELCB, Kontaktor, Capacitor dll) / *Electrical Equipment Specifications (Cubicles, Transformers, Generators, ATS, AMF, UPS, Cables, Breakers, SPD, ELCB, Contactors, Capacitors, etc.)*
5. Arsitektural sistem jaringan dan topologi jaringan MV dan LV / *Architectural Network System and MV (Medium Voltage) and LV (Low Voltage) Network Topologies*
6. Kalkulasi drop tegangan, short circuit, power faktor, estimasi real beban, difersity faktor, utilization faktor, simultan faktor, pencahayaan / *Voltage Drop Calculations, Short Circuit Analysis, Power Factor Correction, Real Load Estimation, Diversity Factor, Utilization Factor, Simultaneity Factor, Lighting Design*
7. Desain instalasi, gambar instalasi, gambar skematik, gambar SLD, gambar detail / *Installation Design, Installation Drawings, Schematic Drawings, Single-Line Diagrams (SLD), Detailed Drawings*
8. Dokumen BoQ, Rencana Anggaran Biaya, Rencana Kerja dan Syarat-syarat / *Bill of Quantities (BoQ), Budget Plan, Work Plan, and Terms and Conditions*

9. Konsep Green dan Smart Building Teknologi / *Green and Smart Building Technology Concepts*

Prasyarat / Pre-requisite

Analisis Sistem Tenaga / Power System Analysis

Pustaka / Reference

1. Persyaratan Umum Instalasi Listrik 2011
2. Schneider Electric, "Electrical Installation Guide", According to IEC International Standards