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***	:	Desain Sistem Kelistrikan Industri / *Industrial Electrical System Design*
2	**Kode Mata Kuliah / *Course Code***	:	EE234712
3	**Kredit / *Credits***	:	3 SKS
4	**Semester / *Semester***	:	0

Deskripsi Mata Kuliah / *Course Description*

Mata kuliah ini merupakan mata kuliah pilihan yang ditawarkan kepada mahasiswa Program Studi Sarjana Teknik Sistem Tenaga, Departemen Teknik Elektro ITS. Secara umum, capaian pembelajaran pada topik Desain Sistem Kelistrikan Industri meliputi definisi, Desain dan review Sistem Kelistrikan Industri. / *This course is an elective course offered to students in the Bachelor's Program in Power Systems Engineering at the Department of Electrical Engineering, ITS. In general, the learning outcomes for the topic of Industrial Electrical System Design include definitions, design, and a review of Industrial Electrical Systems*

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

CPL 3 Mampu mengelola pembelajaran diri sendiri, dan mengembangkan diri sebagai pribadi pembelajar sepanjang hayat untuk bersaing di tingkat nasional, maupun internasional, dalam rangka berkontribusi nyata untuk menyelesaikan masalah dengan mengimplementasikan teknologi informasi dan komunikasi dan memperhatikan prinsip keberlanjutan serta memahami kewirausahaan berbasis teknologi */ Able to manage one's own learning and continually self-develop as a lifelong learner to compete at the national and international levels, with the goal of making a tangible contribution to problem-solving by implementing information and communication technology and considering sustainability principles, as well as understanding technology-based entrepreneurship.*

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 design components, systems, and processes that are logical and realistic in accordance with specified specifications, while considering safety, social, cultural, environmental, and economic aspects.*

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*

1. Mampu memahami tujuan desain system kelistrikan industry dan mampu mereview short circuit. / Able to understand the objectives of industrial electrical system design and capable of reviewing short circuits.
2. Mampu merencanakan sistem distribusi kelistrikan industri / *Able to plan industrial electrical distribution systems.*
3. Mampu memilih peralatan yang disesuaikan dengan kebutuhan dan lingkungan industri / *Able to select equipment tailored to industrial needs and the environment.*
4. Mampu mendesain dan mengoordinasikan sistem pengaman sistem kelistrikan industri / *Able to design and coordinate protective systems for industrial electrical systems.*
5. Mampu memperbaiki power quality akibat beban industri / *Able to address and rectify power quality issues resulting from industrial loads.*
6. Mampu mereview desain system kelistrikan industry (studi kasus) / *Able to review industrial electrical system designs (case studies).*

Pokok Bahasan / *Contents*

1. Penjelasan umum dari tujuan desain kelistrikan industri / *General Explanation of the Objectives of Industrial Electrical Design*
2. Review Shor Circuit / *Short Circuit Review*
3. Merencanakan sistem distribusi kelistrikan industri */ Planning Industrial Electrical Distribution Systems*
4. Pemilihan peralatan yang disesuaikan dengan kebutuhan dan lingkungan industri / *Selection of Equipment Adapted to Industrial Needs and Environment*
5. Desain dan koordinasi sistem pengaman kelistrikan industri / *Design and Coordination of Industrial Electrical Protection Systems*
6. Perbaikan power quality akibat beban industri */ Improving Power Quality Due to Industrial Loads*
7. Mereview dan mendesain system kelistrikan industri (studi kasus) / *Reviewing and Designing Industrial Electrical Systems (Case Study)*

Prasyarat / *Pre-requisite*

Analisa sistem tenaga / Power System Analysis
Pustaka / *Reference*
1. Irwin Lazar, Electrical System Analysis and Design for Industrial Plants, Mc.Graw-Hill. 2. Toran Gonen, Electric Power Distribution System Engineering, Mc.Graw-Hill. 3. Wilson E. Kazibwe, Musoke H. Sendaula, Electrical Power Quality Control Techniques, Van Nostrand Reinhold, 1993