



INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS
DEPARTEMEN TEKNIK ELEKTRO
Program Studi Magister (S2) Teknik Elektro

1	Nama Mata Kuliah / Course Name	: Topik Khusus Sistem Tenaga Listrik / <i>Selected Topics in Power System Engineering</i>
2	Course Code	: EE235315
3	Kredit / Credits	: 2 SKS
4	Semester / Semester	: 3 (Pilihan)

Deskripsi Mata Kuliah / Course Description

Mata kuliah ini menjelaskan mengenai analisis terkait performa sistem tenaga listrik termasuk tren terkini yang berkembang pada sistem tenaga listrik. Tidak hanya teknologi tetapi juga metode-metode analisis terkini untuk menentukan performa sistem tenaga listrik. Mata kuliah ini juga membahas trend permasalahan yang muncul pada sistem tenaga agar dapat direncanakan bagaimana pemecahan permasalahan tersebut.

This course explains about the analysis related to the performance of the electric power system including the latest trends that are developing in the electric power system. Not only technology but also the latest analysis methods to determine the performance of the electric power system. This course also discusses the trend of problems that arise in the power system so that it can be planned how to solve these problems.

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

1. (CPL-04) Mampu menguasai konsep, prinsip keilmuan secara komprehensif, prinsip rekayasa, dan pengetahuan faktual tentang Teknologi Informasi untuk mengembangkan prosedur dan strategi yang diperlukan pada analisis dan perancangan sistem terkait bidang Teknik Elektro.

(PLO-04) Able to master concepts, scientific principles comprehensively, engineering principles, and factual knowledge about Information Technology to develop procedures and strategies required in the analysis and design of systems related to the field of Electrical Engineering.
2. (CPL-05) Mampu mengimplementasikan penyelesaian permasalahan rekayasa yang memperhatikan faktor-faktor ekonomi, kesehatan dan keselamatan publik, kultural, sosial dan lingkungan.

(PLO-05) Able to implement engineering problem solving that takes into account economic, public health and safety, cultural, social and environmental factors.

Capaian Pembelajaran Mata Kuliah / <i>Course Learning Outcomes</i>
1. Mampu menguasai berbagai metode analisis performa pada sistem tenaga listrik. /<i>Able to master various performance analysis methods in electric power systems.</i> 2. Mampu menjelaskan Trend teknologi dan problematika pada sistem transmisi dan distribusi tenaga listrik /<i>Able to explain technological trends and problems in electric power transmission and distribution systems.</i> 3. Mampu mengimplementasikan metode analisis terkini pada sistem tenaga listrik /<i>Able to implement the latest analysis methods in electric power systems.</i> 4. Mampu memecahkan masalah yang terjadi pada sistem tenaga listrik /<i>Able to implement the latest analysis methods in electric power systems.</i>
Pokok Bahasan / <i>Contents</i>
1. Analisis performansi sistem /<i>System performance analysis</i> 2. Konsep dasar analisis sistem tenaga /<i>Basic concepts of power system analysis</i> 3. Trend perkembangan sistem tenaga listrik /<i>Trends in the development of electric power systems</i> 4. Trend permasalahan pada sistem tenaga listrik /<i>Problem trends in electric power systems</i> 5. Metode terkini didalam analisis sistem tenaga listrik /<i>Latest methods in electric power system analysis</i>
Prasyarat / <i>Pre-requisite</i>
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Pustaka / <i>Reference</i>
Utama / <i>Primary:</i> 1. John J. Grainger, William D. Stevenson, Jr., "Power System Analysis", McGraw-Hill Inc, 1994 2. Kothari., "Modern Power System Analysis", Mc Graw Hill India, 2011 3. Mani Vadari, " Electric system operations : evolving to the modern grid," Artech House power engineering, 2020 Pendukung / <i>Supporting:</i> 4. Hadi Saadat, "Power System Analysis", McGraw-Hill Inc, 1999