



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 : Rangkaian Elektronika / <i>Electronic Circuits</i>
2	Kode Mata Kuliah / Course Code : EE234306
3	Kredit / Credits : 3 SKS
4	Semester / Semester : 3

Deskripsi Mata Kuliah / Course Description

Mata kuliah ini membahas tentang proses analisis, simulasi, perancangan dan deskripsi aplikasi rangkaian Dioda Semikonduktor, Bipolar Junction Transistor, Field-Effect Transistor, Respon Frekuensi, Power Amplifier, Differential Amplifier, Rangkaian Feedback, Oscillator, dan Power Supply / *This course covers the process of analyzing, simulating, designing, and describing applications of semiconductor diode circuits, bipolar junction transistors, field-effect transistors, frequency response, power amplifiers, differential amplifiers, feedback circuits, oscillators, and power supplies.*

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

- 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 menganalisa dan mendesain rangkaian Dioda Semikonduktor / *Able to analyze and design Semiconductor Diode circuits.*
2. Mampu menganalisa dan mendesain rangkaian Bipolar Junction Transistor / *Able to analyze and design Bipolar Junction Transistor circuits.*
3. Mampu menganalisa dan mendesain rangkaian Field-Effect Transistors / *Able to analyze and design Field-Effect Transistor circuits.*
4. Mampu menganalisa dan mendesain penerapan rangkaian Power Amplifiers, Differential Amplifier, Rangkaian Feedback dan Oscillator, dan Power Supply / *Able to analyze and design the implementation of Power Amplifiers, Differential Amplifiers, Feedback and Oscillator circuits, and Power Supply circuits.*

Pokok Bahasan / Contents

1. Dioda Semikonduktor / *Semiconductor Diodes*
2. Bipolar Junction Transistor / *Bipolar Junction Transistors (BJT)*
3. Field-Effect Transistor / *Field-Effect Transistors (FET)*
4. Respon Frekuensi / *Frequency Response*
5. Power Amplifier / *Power Amplifiers*
6. Differential Amplifier / *Differential Amplifiers*
7. Rangkaian Feedback dan Oscillator / *Feedback Circuits and Oscillators*
8. Power Supply / *Power Supplies*

Prasyarat / Pre-requisite

Rangkaian Listrik 1 / *Electric Circuits 1*

Pustaka / Reference

1. Robert L Boylestad and Louis Nashelsky, "Electronic Devices and Circuit Theory", Prentice Hall, Inc., 2012