



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

1	<b>Nama Mata Kuliah/Course Name</b> :	Rangkaian Elektronika/ Electronic Circuits
2	<b>Kode Mata Kuliah/ Course Code</b> :	EE234306
3	<b>Kredit/ Credits</b> :	3 SKS
4	<b>Semester/ Semester</b> :	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 discusses the process of analysis, simulation, design and application description of Semiconductor Diode circuits, Bipolar Junction Transistors, Field-Effect Transistors, Frequency Responses, Power Amplifiers, Differential Amplifiers, Feedback Circuits, Oscillators, and Power Supply*

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

1. (CPL-05) Mampu mendesain komponen, sistem, dan proses yang logis dan realistis sesuai dengan spesifikasi yang ditentukan dengan mempertimbangkan aspek keselamatan, sosial, budaya, lingkungan, dan ekonomi.  
*(PLO-05) Able to design components, systems, and/or processes to meet desired needs within realistic constraints in such aspects as law, economic, environment, social, politics, health and safety, sustainability as well as to recognize and/or utilize the potential of local and national resources with global perspective*
2. (CPL-07) Mampu mengidentifikasi, memformulasikan dan menyelesaikan permasalahan di bidang teknik elektro  
*(PLO-07) Able to identify, formulate, analyze, and solve the complex problems in the field of Telecommunication Engineering*

#### Capaian Pembelajaran Mata Kuliah/ Course Learning Outcomes

1. Mampu menganalisa dan mendesain rangkaian Dioda Semikonduktor/ *Be able to analyze and design Semiconductor Diode circuits*

2. Mampu menganalisa dan mendesain rangkaian Bipolar Junction Transistor/ *Be able to analyze and design Bipolar Junction Transistor circuits*
3. Mampu menganalisa dan mendesain rangkaian Field-Effect Transistors/ *Able to analyze and design a series of Field-Effect Transistors*
4. Mampu menganalisa dan mendesain penerapan rangkaian Power Amplifiers, Differential Amplifier, Rangkaian Feedback dan Oscillator, dan Power Supply/ *Able to analyze and design the application of Power Amplifiers circuits, Differential Amplifiers, Feedback and Oscillator Circuits, and Power Supply*

#### **Pokok Bahasan/ Contents**

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

#### **Prasyarat/ Pre-requisite**

Rangkaian Listrik / *Electric Circuits*

#### **Pustaka/ Reference**

Utama :

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