Mata Kuliah Course	Nama MK Name	:	Sinyal dan Sistem *Signals and Systems*
	Kode MK *Code*	:	EE184305
	Kredit *Credits*	:	3 sks
	Semester *Semester*	:	III (Wajib) *III (Compulsory)*
	Beban Belajar *Workload*	:	Kuliah : 3 x 50 = 150 menit/minggu Latihan/tugas : 3 x 60 = 180 menit/minggu Belajar mandiri : 3 x 60 = 180 menit/minggu *Lectures : 3 x 50 = 150 min/week* *Exercises/Assignments : 3 x 60 = 180 min/week* *Self learning : 3 x 60 = 180 min/week*
	Tingkatan *Module Level*	:	Sarjana (S1) *Undergraduate*
	Penanggung Jawab *PIC*	:	M. Abdul Hady, ST, MT
	Pengajar *Lecturer*	:	M. Abdul Hady, ST, MT Ir. Ali Fatoni, MT Eka Iskandar, ST, MT Mochammad Sahal, ST, M.Sc Ir. Rusdhianto Effendie AK, MT Yusuf Bilfaqih, ST, MT Zulkifli Hidayat, ST, M.Sc
	Bahasa *Language*	:	Bahasa Indonesia dan Bahasa Inggris *Bahasa Indonesia and English*
	Persyaratan dan Peraturan *Requirement and Regulation*	:	Setiap mahasiswa harus menghadiri setidaknya 75% dari jumlah perkuliahan untuk dapat mengikuti ujian *A student must have attended at least 75% of the lectures to sit in the exams*

Deskripsi Mata Kuliah
Description of Course

Mata kuliah Sinyal dan Sistem membahas tentang representasi sinyal dan sistem, konsep sistem Linear Time-Invariant (LTI) waktu kontinu, deret Fourier sinyal waktu kontinu, transformasi Fourier waktu kontinu dan aplikasinya, transformasi Laplace dan aplikasinya, konsep sistem LTI waktu diskrit, deret Fourier sinyal waktu diskrit, transformasi Fourier waktu diskrit dan transformasi Z.

The Signal and System course discusses the representation of signals and systems, the concept of a continuous time-invariant Linear Time-Invariant (LTI) system, Fourier series of continuous time signals, Fourier continuous time transformations and their applications, Laplace transforms and their applications, the discrete-time LTI system concepts, Fourier series discrete time signal, Fourier time discrete transformation and Z transformation.

CPL Prodi yang Dibebankan

Learning Outcomes

(CPL-01) Mampu menerapkan ilmu pengetahuan alam dan matematika pada bidang teknik elektro

(PLO-1) Capable to apply knowledge of natural sciences and mathematics to solve electrical engineering problem

(CPL-11) Mampu menerapkan metode, ICT, dan perangkat modern dalam penyelesaian permasalahan dibidang teknik elektro

(PLO-11) Capable to apply methods, ICT, and modern devices in solving problems in the field of electrical engineering

Capaian Pembelajaran Mata Kuliah

Course Learning Outcomes

(CPMK-01) Menguasai konsep sinyal dan sistem linear dalam ranah waktu, ranah frekuensi dan frekuensi kompleks.
(CLO-01) Mastering the concept of signals and linear systems in the complex domain, frequency and frequency domains.

(CPMK-02) Mampu menganalisis sinyal dan sistem linear time-invariant ranah waktu kontinu dan ranah waktu diskrit.
(CLO-02) Able to analyze signals and linear time-invariant systems in the continuous time domain and discrete time domain.

(CPMK-03) Mampu menggunakan software Matlab/Simulink untuk melakukan visualisasi dan eksperimentasi konsep sinyal dan sistem linear.
(CLO-03) Able to use Matlab / Simulink software to visualize and experiment the concepts of signals and linear systems.

(CPMK-04) Menunjukkan sikap bertanggungjawab atas pekerjaan di bidang keahliannya secara mandiri.
(CLO-04) Demonstrate a responsible attitude towards the work in the field of expertise independently.

(CPMK-05) Bekerja sama untuk dapat memanfaatkan semaksimal mungkin potensi yang dimiliki.
(CLO-05) Working together to be able to take full advantage of their potential.

Topik/Pokok Bahasan

Main Subjects

1. Konsep Sinyal dan Sistem
   Signal and System Concepts
2. Sistem LTI Waktu Kontinu
   Continuous Time LTI System
3. Transformasi Fourier Waktu Kontinu
   Continuous Time Fourier Transform
4. Transformasi Laplace
   Laplace transform
5. Sistem LTI Waktu Diskrit
   Discrete Time LTI System

6. Transformasi Fourier Waktu Diskrit
   Fourier Time Discrete Transformation
7. Transformasi Z
   Z-transform

Pembelajaran dan ujian
Study and examination

- Latihan di kelas
  In-class exercises
- Tugas 1, 2, 3
  Assignment 1, 2, 3
- Ujian tengah semester
  Mid-term examination
- Ujian akhir semester
  Final examination

Pustaka
Reference(s)

[1] Fatoni, Ali. "Diktat Sistem Linear"
[2] S.Soliman, Samir and D.Srinath,M. : "Continous and Discrete Signal and Systems", Prentice-Hall, Englewood Cliffs, New Jersey 1990.
[3] V. Oppenheim, A and T. Young, Ian : "Signal and Systems", Prentice-Hall of India, New Delhi 1990
[4] Sanjit K Mitra: "Digital Signal Processing : A Computer - Based Approach." 4th Edition. Mcgraw Hill Education, 2013

Prasyarat
Prerequisite(s)

EW184003 Rangkaian Listrik

EW184003 Electric Circuits