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***	:	Dasar Sistem dan Jaringan Telekomunikasi / *Introduction to Telecommunication Systems and Networks*
2	**Kode Mata Kuliah / *Course Code***	:	EE234402
3	**Kredit / *Credits***	:	2 SKS
4	**Semester / *Semester***	:	4

Deskripsi Mata Kuliah / *Course Description*

Mata kuliah Dasar Sistem dan Jaringan Telekomunikasi membahas konsep dasar Sistem Telekomunikasi dan Jaringan Telekomunikasi, meliputi: konsep dasar sistem dan jaringan telekomunikasi, sinyal informasi, teknik modulasi, medium transmisi dan gangguan transmisi, konsep jaringan telekomunikasi, multiplexing dan multiple access dan konsep komunikasi data. / *The Basic Telecommunication Systems and Networks course covers the fundamental concepts of telecommunication systems and networks, including: basic concepts of telecommunication systems and networks, information signals, modulation techniques, transmission media, transmission impairments, telecommunications network concepts, multiplexing, multiple access, and data communication concepts.*

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

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.*

CPL 7 Mampu mengetahui dan mengaplikasi metode, keahlian sesuai perkembangan terkini di bidang ilmu pengetahuan dan teknologi untuk menyelesaikan permasalahan teknik elektro dengan mengedepankan nilai-nilai universal / *Able to understanding and applying the latest methods and skills in the field of science*

and technology to solve electrical engineering problems while emphasizing universal values.

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*

1. Memahami konsep Dasar Sistem Telekomunikasi, Klasifikasi Sistem dan Sejarah Perkembangan / *Understanding the Basic Concepts of Telecommunication Systems, System Classification, and Development History*.
2. Memahami klasifikasi Sinyal Informasi, representasi data, dan teknik modulasi / *Understanding the Classification of Information Signals, Data Representation, and Modulation Techniques.*
3. Memahami klasifikasi media transmisi dan potensi gangguan transmisi data yang mungkin terjadi / *Understanding the Classification of Transmission Media and Potential Data Transmission Interference.*
4. Memahami konsep jaringan telekomunikasi, multiplexing dan multiple access / *Understanding the Concepts of Telecommunication Networks, Multiplexing, and Multiple Access.*
5. Memahami konsep komunikasi data, dan protokol komunikasi data. / *Understanding the Concept of Data Communication and Data Communication Protocols.*

Pokok Bahasan / *Contents*

1. Dasar Sistem Telekomunikasi. / *Fundamentals of Telecommunication Systems*.
2. Sinyal Informasi / *Information Signals*
3. Representasi sinyal / *Signal Representation*
4. Teknik modulasi / *Modulation Techniques*
5. Media transmisi / *Transmission Media*
6. Gangguan transmisi data / *Data Transmission Errors*
7. Multiplexing dan Multiple Access / *Multiplexing and Multiple Access*
8. Jaringan telekomunikasi dan jaringan komunikasi data / *Telecommunication Networks and Data Communication Networks*

Prasyarat / *Pre-requisite*

Pengantar Teknik Elektro / Introduction to Intelligence Electrical and Informatics

Pustaka / *Reference*

1. Roger L. Freeman, Fundamental of Telecommunications, Second Edition, John Wiley & Sons, 2005
2. Stallings, W., Data and Computer Communications, 10th Edition. Upper Saddle River, NJ, USA, Prentice Hall, 2014
3. Gupta, Prakash C., Data Communications and Computer Networks, Prentice Hall of India, New Delhi, 2006.
4. Andrew S. Tanenbaum, David J. Wetherall, Computer Networks, Fifth Edition, Pearson, 2013
5. Simon Saunders, Alejandro Aragón-Zavala, Antennas and Propagation for Wireless Communication Systems, 2nd Edition, John Wiley & Sons Ltd., 2007.
6. Shanmugam, K.Sam, Digital and Analog Communication, John Wiley and Sons (WIE), International Edition, 1979