UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER ENGINEERING
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY

Module name	**Telecommunication System**
Module level	Undergraduate
Code	EC184302
Courses (if applicable)	Telecommunication System
Semester	*3/Fall* (Gasal)
Contact person	Ir Gatot Kusrahardjo, MT.
Lecturer	Ir Gatot Kusrahardjo, MT.
Language	Indonesia / English
Relation to curriculum	Undergraduate degree program, *mandatory, 3rd* semester.
Type of teaching, contact hours	Lecture, < 60 students, 170 MENIT * 2 SKS
Workload	1. *Lectures: 3 x 50 = 150 minutes (2.5 hours) per week.* 2. *Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week.* 3. *Private study:3 x 60 = 180 minutes (3 hours) per week.*
Credit points	*3* credit points (sks).
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Mandatory prerequisites	
Learning outcomes and their corresponding PLOs	CLO-1 Students are able to explain concepts of Telecommunication Systems and Data Networks PLO-3 CLO-2 Students are able to distinguish types of information signals, types of transmission media and various modulation techniques PLO-3 CLO-3 Students are able to design voice telecommunication PLO-5 PLO-6 CLO-4 Students are able to complete a case by using data transmission concepts PLO-6
Content	Basic Telecommunication Systems and Networks course discusses the basic concepts of Telecommunication Systems and Data Networks in general. The initial section learns basic components, system classification, types of information signals, types of transmission media and various modulation techniques. Wireless systems section discusses the classification of the Radio Frequency Spectrum and its propagation, as well as antenna & satellite functions. To provide an overview of voice communication, the Telephony System, Erlang traffic and multiplexing techniques are introduced. Meanwhile, the data transmission section discusses the concept of networks, network protocols, internet systems

	(TCP/IP) and the processes that occur in each network layer. In the final section, we learn various disturbances and their effects on the performance of telecommunication systems and networks.
Study and examination requirements and forms of examination	• *In-class exercises* • *Quiz 1 and 2* • *Assignment 1, 2, 3* • *Mid-term examination* • *Final examination*
Media employed	*LCD, whiteboard, websites (myITS Classroom).*
Assessments and Evaluation	*CO-1: Question no 1 in midterm exam (10%)* *CO-2: Question no 2 in midterm exam (10%)* *CO-3: Assignment 1 (5%), question no 4 in midterm exam (20%), Quiz 2 (5%)* *CO-4: Question no 1 in final exam (25%), question no 2 in final exam (25%)*
Reading List	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. Shanmugam, K.Sam, "Digital and Analog Communication", John Wiley and Sons (WIE), International Edition, 1979. 6. Simon Saunders, Alejandro Aragón-Zavala, "Antennas and Propagation for Wireless Communication Systems", 2nd Edition, John Wiley & Sons Ltd., 2007.