



MODULE HANDBOOK DESCRIPTION

Module designation	Basic Telecommunications	
Code	FBS1217	
Semester(s) in which the module is taught	2/first year	
Person responsible for the module	Sudi Mariyanto Al Sasongko, ST., MT.	
Language	Indonesian	
Relation to curriculum	Compulsory for all majors	
Teaching methods	Lectures, small group discussion, case base method.	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: <ul style="list-style-type: none"> • Lectures: 3 x 50 minutes • Exercises and Assignments: 3 x 60 minutes • Private study: 3 x 60 minutes. total study hours = 8 hours 30 minutes/week	
Credit points	3 SKS (~ 4.8 ECTS)	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	Students are able to understand the basic concepts of time domain and frequency domain, analog and digital telecommunications systems, analog and digital television standard systems, the basics spectrum of TV signals, scanning processes, working principles of computer networks and their components as a means of data communication, the radio waves, working principles of mobile communication systems, and the process of making a mobile phone call	PLO2

	Students are able to analyze principles of AM, DSB, and SSB modulation, AM modulation index, AM frequency spectrum, FM modulation, FM modulation index, Bessel table-based FM spectrum, working principles of digital communication systems: conversion of analog signal to digital, time division multiplex.	PLO3
	Students are able to design wireless infrastructure with the Line of sight approach.	PLO4
Content	<ol style="list-style-type: none"> 1. The concept of signals in the time domain and frequency domain, the basic principles of analog and digital communication systems in the time domain and frequency domain 2. The working principle of analog modulation systems consists of AM, SSB, and FM modulation. 3. Standards for analog and digital television systems and relation of the frequency spectrum, 4. Working principle of digital modulation system and ADC process, 5. Principles of computer networks for data communication 6. Working principle of the mobile communication system. 	
Examination forms	<ul style="list-style-type: none"> - Written case studies - Midterm and final test 	
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> 1. Attendance assessment : 5 % 2. Case I assessment: 10% 3. Case II assessment: 10% 4. Case III assessment: 10% 5. Midterm assessment: 30% 6. Final assessment: 35% <p>Students must have a final grade of 65% or higher to pass.</p>	
Reading list	<ol style="list-style-type: none"> 1. Kennedy & Davis, 1993, Electronic Comm. System, Fourth Ed, Mc Graw Hill. 2. Dennis Roddy & John Coolen, 1995, Electronic Comm. System, Fourth Ed, Prentice Hall Inc. 3. Roger L Freeman, 1999, Fundamentals of Telecommunications, John Wiley & Sons, Inc. 4. Theodore S Rappaport, 2002, Wireless Communications Principle and Practice, Prentice Hall. 	