MODULE HANDBOOK DESCRIPTION

Module designation	Telecommunication System Measurement Laboratory	
Code	FBC4115	
Semester(s) in which the module is taught	7 / fourth year	
Person responsible for the module	Djul Fikry B., ST., MT.	
Language	Indonesian	
Relation to curriculum	Elective for telecommunication engineering	
Teaching methods	Contextual Instruction (CI)	
Workload (incl. contacthours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester : • Practice : 1 x 50 minutes • Data analysis : 1 x 50 minutes • Writing report : 1 x 50 minutes. Total study hours = 2 hours 30 minutes/week	
Credit points	1 (~ 1,6 ECTS)	
Required and recommended prerequisites for joiningthe module	- Basic Telecommunications (FBS1217) - Telecommunication System Measurement (FBC4114)	
Module objectives/intend edlearning outcomes	1. Students are able to analyze indoor channel propagation, transmit power and receive power over long distances, and measure indoors using WiFi channels (2.4 GHz) and propagation channels on COST 207.	PLO3
	2. Students are able to design WiFi communication using WiFi communication such access point device	PLO4
	3. Students are able to compare device using WiFi and cellular communication by experiment.	PLO5

Content	1. Indoor measurement of WiFi 802.11n 2. Indoor 4G (LTE) Signal Strength Measurement 3. 4G (LTE) Outdoor Signal Strength Measurement
Examination forms	1. Pre-test 2. Practice skills 3. Practice report 4. Response
Study and examination requirements	The final grade in the module is composed of: 1. Pre-test and practice skills = 20% 2. Practice report and response = 80% Students must have a final grade of 65% or higher to pass
Reading list	1. Suhana dan Shoji, S., 1981, Pengantar Teknik Telekomunikasi, Penerbit Pt Pradnya Paramita. 2. Hayt, W.H., and Buck, J.A., 2011, Engineering Electromagnetics, Eight Edition, McGraw-Hill Companies. 3. Schenk, TCW., Bultitude, R.J.C., Augustin, L.M., Poppel, R.H. V., and Brussaard, G., 2002, Analysis of Propagation Loss in Urban Microcells at 1.9 GHz and 5.8 GHz, Proc. URSI Commison F Open Symposium on Radiowave Propagation and Remote Sensing, Garmisch-Partenkirchen, Germany, February 12-15. 4. Shanmugam, K.S., 2013, Digital And Analog Communication System, Wiley.