MODULE HANDBOOK DESCRIPTION

Module designation	**Digital Communication**
Code	**FBC3104**
Semester(s) in which the module is taught	**5 / third year**
Person responsible for the module	Made Sutha Yadnya ST., MT
Language	Indonesian
Relation to curriculum	Elective for Telecommunication System
Teaching methods	Lectures, small group discussion, simulation and design, Quiz.
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: • Lectures: 2 x 50 minutes • Exercises and Assignments: 2 x 60 minutes • Private study: 2 x 60 minutes. total study hours = 5 hours 40 minutes/week
Credit points	2 SKS (~ 3.2 ECTS)
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	1. Students are able to analyse the basic digital communication, channel digital, PCM, important parameters of digital communication, types of modulation, propagation signal, filter digital , and water fall diagrams. PLO3
	2. Students are able to use Matlab for model digital communication PLO4
	3. Students are able to conduct experiment with Matlab for analized and syntesys channel model PLO5
Content	1. Basic Communication analog vs Digital 2. Parameter Digital Communication 3. Modulation Digital 4. Standart Digital Communication 5. Design a water fall diagram (BERvsS/N) 6. Model Filter Digital 7. Propagation Channal 8. Telephony Digital 9. OFDM 10. Adaprive Digital Communication 11. WiMax Communication

Examination forms	- Essay - Presentation case study - Simulation - Midterm and Final test
Study and examination requirements	The final grade in the module is composed of: a. Case I assessment: 15% b. Case II assessment: 15% c. Case III assessment: 15% d. Case IV assessment: 15% e. Midterm assessment: 20% f. Final assessment: 20% Students must have a final grade of 75% or higher to pass
Reading list	1. Oppenheim, Alan V., Ronald W. Schafer, and John R. Buck. Discrete-Time Signal Processing. Upper Saddle River, NJ: Prentice-Hall, 1999. 2. Duhamel, P. and M. Vetterli, "Fast Fourier Transforms: A Tutorial Review and a State of the Art," Signal Processing, Vol. 19, April 1990, pp. 259-299. 3. Proakis, John G., Digital Communications, Fourth Ed., New York, McGraw-Hill, 2001. 4. Haykin, Simon, Adaptive Filter Theory, Third Ed., Upper Saddle River, NJ, Prentice-Hall, 1996. 5. Kurzweil, Jack, An Introduction to Digital Communications, New York, John Wiley & Sons, 2000. 6. Farhang-Boroujeny, B., Adaptive Filters: Theory and Applications, Chichester, England, John Wiley & Sons, 1998. 7. Steele, Raymond, Ed., Mobile Radio Communications, Chichester, England, John Wiley & Sons, 1996.