



**MODULE HANDBOOK DESCRIPTION**

Module designation	Telecommunication System	
Code	FBC3102	
Semester(s) in which the module is taught	5 / third year	
Person responsible for the module	Suthami Ariessaputra, S.T., M.Eng.	
Language	Indonesian	
Relation to curriculum	Compulsory course for Telecommunication System	
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"> <li>• Lectures: 3 x 50 minutes</li> <li>• Exercises and Assignments: 3 x 60 minutes</li> <li>• Private study: 3 x 60 minutes.</li> </ul> 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	1. Students can explain the concept of the Telecommunication System, the Telecommunication System Model, Analog Modulation, and Angle Modulation.	PLO3
	2. Students can explain information and entropy, the probability of information and its basic statistical parameters, coding theory, and receiver filters.	PLO4
	3. Students can explain the technology model of WiMax, Parallel and Series Transmission, and Multiplexing (FDM, TDM, OFDM).	PLO5

Content	<ol style="list-style-type: none"> <li>1. The concept of the Telecommunication System.</li> <li>2. The Telecommunication System Model.</li> <li>3. Analog Modulation.</li> <li>4. Angle Modulation.</li> <li>5. Information and entropy.</li> <li>6. The probability of information and its basic statistical parameters.</li> <li>7. The Coding theory.</li> <li>8. Receiver filters.</li> <li>9. Technology of WiMax.</li> <li>10. Parallel and Series Transmission.</li> <li>11. Multiplexing (FDM, TDM, OFDM).</li> </ol>
Examination forms	<ul style="list-style-type: none"> <li>- Multiple choice examination and Essay.</li> <li>- Midterm and final test</li> </ul>
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> <li>a. Multiple choice examination and Essay score: 30%.</li> <li>b. Midterm assessment: 30%</li> <li>c. Final assessment: 40%</li> </ol> <p>Students must have a final grade of 65% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> <li>1. B. P. Lathi, Z. Ding, 2019. Modern Digital and Analog Communication Systems (5th. ed.). Oxford University Press, Inc., USA. ISBN: 0190686847, 9780190686840.</li> <li>2. R. L. Freeman. 2005. Fundamentals of Telecommunications, (2nd. ed.). John Wiley &amp; Sons, Inc., USA.</li> <li>3. Seybold, J.S. (2005) Introduction to RF Propagation. John Wiley and Sons, Hoboken</li> <li>4. Proakis, J. G., Salehi, M. (2001). Communication Systems Engineering. Upper Saddle River, NJ, USA: Prentice-Hall. ISBN: 0130617938</li> <li>5. Rappaport, T. S. (1996). Wireless communications - principles and practice. Prentice Hall. ISBN: 978-0-13-375536-7</li> <li>6. William C. Y. Lee. 1992. Mobile Communications Design Fundamentals (2nd. ed.). John Wiley &amp; Sons, Inc., USA.</li> </ol>