



MODULE HANDBOOK DESCRIPTION

Module designation	Telecommunication Electronics	
Code	FBC3208	
Semester(s) in which the module is taught	6 / third year	
Person responsible for the module	Cahyo Mustiko Okta Muvianto, ST., Msc., Ph.D	
Language	Indonesian	
Relation to curriculum	Elective for telecommunication engineering	
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: <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 (~ 3.2 ECTS)	
Required and recommended prerequisites for joining the module	- Basic Telecommunications (FBS1217) - Basic Electronics (FBS2125)	
Module objectives/intended learning outcomes	1. Students are able to explain the basic concepts of circuits telecommunication electronics	PLO3
	2. Students are able to proficient the concepts, principles and procedures for designing telecommunications electronics circuit in the field of telecommunications such as RF components, resonator circuit models, filters, impedances, amplifiers, oscillators and mixers	PLO4
	3. Students are able to formulate telecommunication electronics engineering problems, able to describe system design (for example, RF amplifiers) and be able to utilize technology-based analysis and engineering tools (ADS).	PLO5

Content	<ol style="list-style-type: none"> 1. Telecommunications / RF Electronics Components and Systems 2. Resonator Circuit 3. Analog filter Circuit 4. Impedance Match Circuit (IMC) and Transmission Lines 5. Small Signal Amplifier Circuit 6. Oscillator Circuit 7. Mixer Circuit 8. Phase Locked Loop 9. Modulator / Demodulator
Examination forms	<ul style="list-style-type: none"> - Essay - Presentation case study - 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"> a. Case I assessment: 10% b. Case II assessment: 10% c. Case III assessment: 10% d. Midterm assessment: 30% e. Final assessment: 40% <p>Students must have a final grade of 65% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> 1. Bowick, Christ; RF Circuit Design, 2nd Edition, 2005 2. William Pozar, David M; Microwave Engineering, 4th edition, John Wiley & Sons, 2011 3. Liao, Samuel Y; Microwave Circuit Analysis and Amplifier Design, Prentice Hall, 1987 4. William, Arthur; Filter Handbook, McGraw-Hill, 1981 5. Gonzalez, Guillermo; Microwaves Transistor Amplifier: Analysis & Design; Prentice Hall, 1984 6. Krauss, HL; Solid State Engineering, 1980

