MODULE HANDBOOK DESCRIPTION

Module designation	Digital Signal processing
Code	FBB3208, FBC3207
Semester(s) in which the module is taught	6 / third year
Person responsible for the module	Bulkis Kanata, ST., MT.
Language	Indonesian
Relation to curriculum	Concentration Elective for Electronics Engineering and Telecommunication Engineering.
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: • 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	- Signal and System (FBS2229)
Module objectives/intended learning outcomes	1. Students are able to explain: Concepts of signal processing, Discrete time signals and systems, Discrete Fourier Transform and Invers Discrete Fourier Transform, Digital Filter (FIR/IIR)	PLO3 50%
	2. Students are able to design of programs to apply convolution, Discrete Fourier Transform and invers discrete fourier Transform, design of digital filter (FIR/IIR)	PLO3 30%
	3. Students are able to conduct experiment on Fast Fourier transform and Convolution for signals, Filtering of Signals.	PLO4 20%

Content	Basic concepts of signal processing, Discrete time signals and systems (Linear system, Response of linear time invariant system, convolution, difference equation), Discrete Fourier Transform (DFT)/Invers DFT (Fast Fourier Transform (FFT)/Invers Fourier Transform (IFFT), Digital Filters (Introduction to Digital Filters, Finite Impulse Response (FIR) and Invinite Impulse Response (IIR), Design of FIR/IIR)
Examination forms	- Written case study - Midterm and final test
Study and examination requirements	The final grade in the module is composed of: 1. Case I assessment: 15% 2. Case II assessment: 15% 3. Midterm assessment: 35% 4. Final assessment: 35% Students must have a final grade of 65% or higher to pass
Reading list	1. Tan, L. & Jiang, J. Digital Signal Processing. Digital Signal Processing (2013). doi:10.1016/C2011-0-05250-X. 2. Smith, S. W. Digital Signal Processing: A Practical Guide for Engineers and Scientists. IEEE Signal Processing Magazine vol. 17 (2003). 3. Proakis, J. G. & Monolakis, D. G. Digital signal processing: principles, algorithms, and applications. Pentice Hall 1–42 (1996). 4. McClellan, J. H., Schafer, R. & Yoder, M. DSP First second edition. 53, 1689–1699 (2013).