



MODULE HANDBOOK DESCRIPTION

Module designation	Control System Laboratory	
Code	FBS3140	
Semester(s) in which the module is taught	5/third year	
Person responsible for the module	Supriono, ST, MT.	
Language	Indonesian	
Relation to curriculum	Compulsory for all Majors	
Teaching methods	Contextual Instruction (CI)	
Workload (incl. contact hours, self-study hours)	<p>Contact minutes every week, each week of the 16 weeks/semester :</p> <ul style="list-style-type: none"> • Practice : 1 x 50 minutes • Data analysis : 1 x 60 minutes • Writing report : 1 x 60 minutes. <p>Total study hours = 2 hours 50 minutes/week</p>	
Credit points	1 (~ 1,6 ECTS)	
Required and recommended prerequisites for joining the module	<ul style="list-style-type: none"> - Control System (F BS3139) - Electrical Circuit I (FBS1213) - Electrical Circuit II (FBS2122) 	
Module objectives/intended learning outcomes	1. Students are able to analyse the basic concepts of closed loop control systems, the effect of frequency changes on the control system, and PID control systems for various plants.	PLO3
	2. Students are able to design speed control system, position control system, gain variation on closed-loop control systems, frequency response on an amplifier, and frequency response on a filter based on instructions from the control system practicum module.	PLO4

	5. Students are able to compare the speed control system, position control system, gain variation on closed-loop control systems, frequency response on an amplifier, and frequency response on a filter with the experimental results and make conclusions then report the results.	PLO5
Content	<ol style="list-style-type: none"> 1. Speed control system experiment on a DC motor 2. Position control system experiment on a DC motor 3. Gain variation experiments on closed-loop control systems 4. Frequency response experiments on an Amplifier. 5. Frequency response experiments on a filter. 	
Examination forms	<ol style="list-style-type: none"> 1. Pre-test 2. Practice skills 3. Practice report 4. Response 	
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> 1. Pre-test and practice skills = 20% 2. Practice report and response = 80% <p>Students must have a final grade of 65% or higher to pass</p>	
Reading list	<ol style="list-style-type: none"> 1. Ogata, K., 2020, "Modern Control Engineering", Prentice Hall. 	