

강 의 계 획 서

교과목명	자동제어	주야	주간	교과 코드	20050106	이수구분	전공선택
학점	3	주당시수	이론(3) / 실기(0)			학점구성	이론(3) 실습(0) 설계(0)
개설학년	3	개설학기	2학기			강의시간	월 1,2/화1
담당교수	임채욱	상담일시	1~2 P.M., Mon.	연구실	N7-506		전 화: 042-821-1733
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인증구분	인증(O) 비인증()	교과구분	전공_일반			선수권장 과목	Engineering Mathematics, Dynamics

교과목의 교육목적	1. Studying the concept and principle of feedback control and growing the ability of automatic control for machinery devices and structures
	2. Growing physical and mathematical understanding for plants and actuators
	3. Studying the principles and design methods of PID controller and acquiring application ability to design controller
	4.
교과목의 개 요	In this lecture, the characteristics of plants and principles of feedback control are learned and studied to acquire the design, analysis, and application ability of controller. We will learn Laplace transform and transfer function for modelling in the frequency domain. We will learn definition of stability, and definition of BIBO stability and its necessary and sufficient condition. We will learn step responses of first-order and second-order systems. And we will learn how to analyze feedback control system and design controller gain based on the results of time response. The ultimate goal is to understand the PID controller and acquire the designing ability of the PID controller.

교재	구분	교재명	저자	출판사	출판년도
	주교재	Control Systems Engineering, 7th Ed.	Norman.S. Nise	Wiley	2016
	참고 서적	Modern Control Systems, 12th Ed. Feedback Control of Dynamic Systems, 6th Ed.	R.C.Dorf & R.H.Bishop G.F.Franklin et al.	Pearson Pearson	2011 2010
비고					

강의진행 방 식	강의(○) 토의(○) 과제평가() 현장학습() Computer사용(○) Beam Project사용(○) OHP사용() VTR사용() 기타() ※ 해당란에 모두 표시
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강의평가 방 식	정기평가(80%) 수시평가(0%) 과제평가(0%) 보고서(0%) 퀴즈(0%) 실험(0%) 프로젝트(0%) 발표(0%) 출석평가(20%) 기타(0%) ※ 합은 100%
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주별 강의진행계획

주	강의내용	비고
1	An Introduction to Lecture	
2	An Introduction to Feedback Control System	
3	Laplace Transform and Transfer Function	
4	Obtaining Transfer Function	
5	Differential Equation and Transfer Function: Electrical and Mechanical Systems	
6	Differential Equation and Transfer Function: Rotational System with Gears	
7	Electromechanical System Block Diagram	
8	Midterm Exam	
9	Definition and Condition of Stability	
10	Routh-Hurwitz Criterion An Introduction to Time Response	
11	Time Response: First-Order System	
12	Time Response: Second-Order System	
13	Time Response: Second-Order System	
14	Time Response: Second-Order System Analysis and Design of Feedback Control System	
15	Final Exam	