강의계획서

검색조건 :

| 교양/교직/군사학 | ☐ |
| 핵심교양(영역1) 글쓰기(1-①) | ☐ |

조회

[수업시간][건물 및 교과구분 코드][검색]

[영문강의계획서보기(Syllabus)]

과목명	디지털제어시스템
과목번호	ELEC733001
학점	3.0
개설대학	전자공학부
개설학기	20161
교과구분	전공
담당교수	김민영
강의시간	화7A7B8A 목7A7B8A
강의실명	IT대학1호관(공대10호관)613 IT대학1호관(공대10호관)613
연락처/E-mail	** 통합정보시스템 로그인- 수업/성적- 수업- "강의담당교수조회"에서 확인 가능함.
면담시간	
강의언어	한국어

[강의계획서]

강의개요 및 목적

Control systems are, nowadays, implemented by means of computers or DSPs.
The use of processors in the loop has several advantages and some disadvantages.
+ Controllers are easily implementable, and can be tuned on-line.
+ Controllers are small (and cheap).
+ Complex controllers (i.e. controllers performing several operations) can be easily implemented.
+ Controller design can make use of symbolic SW tools.
+ Processors can be used to implement monitoring and safety tasks.
- The closed-loop system contains continuous-time components and discrete-time components (and interfacing devices): it is a hybrid system.
- The analysis of the closed-loop system is often based on approximations.
- Digital controllers are very sensible to numerical errors.
- Controller design is more involved and (often) non-intuitive.

- The notion of frequency for discrete-time systems is non-intuitive.

Aims of the course
? To develop mathematical descriptions of computer-controlled systems.
? To analyse computer-controlled systems.
? To understand the effect of sampling/hold on performance.
? To design computer-controlled systems.
? To assess the performance of computer-controlled systems.

교재 및 참고문헌

K. Ogata, Discrete-time control systems, Prentice-Hall
C.L. Phillips and H.T. Nagle, Digital control system analysis
and design, Prentice-Hall
G.F. Franklin and J.D. Powell, Feedback control of dynamical
systems (Chapter 8), Addison-Wesley

강의진행 방법 및 활용매체

Lectures are mainly delivered using a beam projector.
Handouts are available on the ABEEK web

(http://abeek.knu.ac.kr/).

과제, 평가방법, 선수과목

(1) Mid-term exam (35%)

(2) Final exam (35%)

(3) Quiz (20%)

(4) Attendance (10%)

Grading policy: following Uiv. grading rule

수강에 특별히 참고할 사항

This course will be delivered in classroom without lab experiments.

장애학생을 위한 학습지원 사항

A. Hearing Impaired : first row priority seating, Class transcripts may also be provided.

B. Develpmenatlly Challenged : Extended Test Period

C. Brain lesions : Extended Test Period, Class transcripts may also be provided

D. Visually Impaired : Larger Font test will be provided

Other : Aid offered dependant on specific disabilities

[강의 내용 및 일정]

no	강의 요목 및 수업목표	과제 및 연구문제	교재 및 참고자료	비고
1	Introduction to digital control systems		ch1	
2	Z−transforms: definition, properties and theorems		ch2	
3	Sampling and reconstruction		ch3	
4	The pulse transfer function		ch3	
5	Stability and performance		ch4	
6	Stability and performance		ch4	
7	Mid−term exam			
8	State−space analysis		ch5	
9	State−space analysis		ch5	
10	Pole placement and observer design		ch6	
11	Pole placement and observer design		ch6	

12	Polynomial Eq approach to control systems design		ch7	
13	Qadratic Optimal Control System		ch8	
14	Making-up			
15	Final exam			

수험부정행위시, 경북대학교 수험부정행위에관한처벌규정에 의거 그 정상에 따라 수험자격박탈, 근신, 유기·무기정학, 또는 제적 처분될 수 있으니, 각별히 유의하여 주시기 바람.