강의계획서

검색조건 :

교양/교직/군사학	▼

첨성인기초 – 독서와토론	▼

<div align="right">조회</div>

[수업시간][건물 및 교과구분 코드][검색]

<div align="right">[한글강의계획서보기]</div>

Course Title	Digital Control Systems
Course Code	ELEC733001
Credits	3.0
Department	전자공학부
Semester	20181
Course Categories	전공
Instructor	Min Young Kim
Hours	화7A7B8A 화8B9A9B
Location	IT대학1호관(공대10호관)513 IT대학1호관(공대10호관)513
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Office Hours	
language	한국어

[Syllabus]

Course Goals and Objectives

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.

Textbook and other references

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

Course Description, Methods, and Materials

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

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

Assignments, Grading Criteria, Prerequisite Subject

(1) Mid−term exam (35%)

(2) Final exam (35%)

(3) Quiz (20%)

(4) Attendance (10%)

Grading policy − Following University Grading Rule

Notice To Students

This course will be delivered in classroom without lab experiments.

Notice To Students with Disabilities

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

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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

[Course Lesson Plan]

no	Course Goals and Objectives	Assignment	Text & Materials	Etc.
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			

Cheating, plagiarism, and other dishonest practices will be punished as harshly as Kyungpook National University policies allow. The University specifies that cheating is grounds for dismissal. Penalties less severe may be imposed instead. A list of possible disciplinary actions is given below. Actions by the university:
- Failure in course
- Suspension from university for a designated period
- Expulsion from university