

University of Illinois at Chicago
Department of Mechanical Engineering
ME 512 - Automatic Control of Mechanical Systems

Instructor: Professor Sabri Cetinkunt
ERF 3003, 996-9611
Office Hours: M 2-6

Text: Digital Control of Dynamic Systems, Franklin, G.F., Powell, J.D., Workman, J.

Additional Text:

Modern Control Systems, Dorf, R., Addison-Wesley, 1988.

Digital Control Systems, Kuo, B., Sanders Pub., Second Ed.

Prerequisite: ME 412 or equivalent.

Grading: Exam 1 : 25%
Exam 2 : 25%
Final : 25%
Homework: 25%

Remarks: No late homework accepted. Proficiency in at least one of the high level programming languages (C, Fortran, or MS-BASIC), or learn to use one of the CAD-tools for control system design and analysis (i.e. MATLAB student version).

Course Outline

Topic	Chapter	# Lectures
Introduction to Computer Control Systems	1	3
Digital Sampling: Shannon's Sampling Theorem	2	6
Introduction Z-transforms	3	6
State space modeling	4	6
Eigenvalues and Eigenvectors	4	3
Controllability and Observability	5	9
Controller and Observer Design using Pole Placement	5	9
2 Exams		3

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