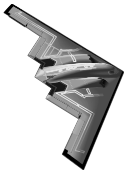

ECEN/MAE 3723 Systems I
Section 001/ CID:11881/14404
Fall 2004
Syllabus

Time: Tuesday/Thursday 3:30-4:45PM

Place: Engineering South 201B

Prerequisite: ENSC 2613- Introduction to Electrical Science
MATH 2233- Differential Equations

Text: *System Dynamics*
Katsuhiko Ogata, Prentice-Hall, 4th edition, 2004

References:
Automatic Control Systems
Benjamin Kuo and Farid Golnaraghi, John Wiley, 8th edition, 2003
Modeling and Analysis of Dynamic Systems
Charles Close and Dean Frederick, John Wiley, 3rd edition, 2002
System Dynamics
William Palm, McGraw Hill, 2005
Signals and Systems- an Introduction
Leslie Balmer, Prentice-Hall, 1991
Signals, Systems and Transforms
Charles L. Phillips and John M. Parr, Prentice-Hall, 1995

Instructor: Professor Gary G. Yen, Engineering South 404
http://www.okstate.edu/elec-engr/faculty/yen
405-744-7743, 405-744-9198 (fax), gyen@okstate.edu
Office Hours: Tuesday/Thursday 9:30AM-12:00PM;
2:00PM-3:30PM; or by appointment only

TA: Moayed Daneshyari, ATRC 241, 4-6511, moayed@okstate.edu
Yunfei Zou, , 4-4115, yunfei.zou@okstate.edu
(weekly homework help session will be arranged and posted)

Objectives: To introduce some basic tools needed for signal and system analysis and design applicable to dynamic controls through mathematical derivations and computer simulations.
The topics include

- signals and systems representation
- *Laplace* transform
- differential equation approach
- transfer function approach
- state space approach
- modeling of electrical systems
- modeling of mechanical systems
- modeling of fluid and thermal systems
- time-domain analysis of dynamic systems
- frequency-domain analysis of dynamic systems
- time-domain analysis of control systems
- frequency-domain analysis of control systems
- Matlab and Simulink

Grading:

10 Weekly Homework Assignments **20%**
Tentative schedule-
9/2, 9/9, 9/16, 9/23 (before the first midtem)
10/12, 10/19, 10/28, 11/4 (before the second midterm)
11/18, 11/30
10/26 Fall Break; 11/25 Thanksgiving Holiday
Midterm Exam 1 (October 7, 3:30-4:45PM) **20%**
Oral Presentation (October 30, Saturday, 1:00-4:00PM) **10%**
Midterm Exam 2 (November 16, 3:30-4:45PM) **20%**
Computer Project (December 9, 5:00PM) **10%**
Final Exam (December 14, 2:00-3:50PM) **20%**
A-85% above; **B**-76%-85%; **C**-66%-75%; **D**-56%-65%; **F**-55% below
No makeup exams will be given.

Seminar:

Every month, a CEAT faulty (ECEN, MAE, ChE, and AgE) will be invited to brief their research activities in control related subjects.

Note:

All exams are open notes, but close book.

Drop and Add:

The instructor will follow University, College and Departmental guidelines for drops and adds. Consult the calss schedule book or departmental counselors for more information.

Attendance:

Students will be expected to attend class. Habitual failure to do so will result in a reduced grade. Class attendance is taken occasionally for reference.

An incomplete grade will only be given when a student misses a portion of the semester because of illness or accident. All (I) grades must be completed within thirty days.

Academic Dishonesty:

Cheating on homework, quizzes or examinations, plagiarism and other forms of academic dishonesty are serious offenses and will subject the student to serious penalties.

On the first instance of academic dishonesty, the student will receive a grade of zero for the assignment, quiz or examination, and a letter will be placed in the student's academic file. The second instance will result in a grade of "F" for the course.

Disability Impairment:

If any member of the class feels that he/she has a disability and needs special accommodations of any nature whatsoever, the instructor will work with you and the University Office of Disabled Student Services to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class. Please advise the instructor of such disability and the desired accommodations at some point before, during, or immediately after the first scheduled class period.

Class Website:

You are advised to check on class website prior to each class at
http://www.okstate.edu/elec-engr/faculty/yen/fall04.html
for important information, such as handouts, homework assignments, schedule changes, old exams and etc.