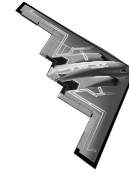# ECEN/MAE 3723 Systems I
Section 001 CID:11986/14582
Fall 2006
Syllabus

Time: Tuesday/Thursday 12:30PM-1:45PM

Place: Engineering South 214A

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 9:00AM-12:00PM;
or by appointment only

TA: Wen-Fung Leong/ECEN, ATRC 241, 4-6511, wenf.leong@okstate.edu
TBA/MAE (weekly homework help session will be arranged)

Objectives: To introduce selected 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-	
	8/31, 9/7, 9/14, 9/21 (before the first midtem)	
	10/12, 10/19, 10/26, 11/2 (before the second midterm)	
	11/21, 11/28	
	10/10 Fall Break; 11/23 Thanksgiving Holiday	
	Midterm Exam 1 (October 5, 12:30PM-2:00PM)	**20%**
	Oral Presentation (October 31, 12:30PM-2:00PM)	**10%**
	Midterm Exam 2 (November 14, 12:30PM-2:00PM)	**20%**
	Computer Project (December 8, 5:00PM)	**10%**
	Final Exam (December 12, 10:00AM-11:50AM)	**20%**

A-85% above; **B**-76%-85%; **C**-66%-75%; **D**-56%-65%; **F**-55% below
No makeup exams will be given.

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 periodically 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 Integrity: The instructor will strictly follow OSU's Academic Integrity Policy. Cheating on homework, quizzes or examinations, plagiarism and other forms of academic dishonesty are serious offenses and will subject the student to serious penalties.

Plagiarism. Presenting the written, published or creative work of another as your own work. Whenever you use wording, argument, data, design, etc., belonging to someone else in a paper, report, oral presentation, or other assignment, you must take this fact explicitly clear by correctly citing the appropriate references or sources. You must fully indicate the extent to which any part or parts of the project are attributed to others and provide citations for paraphrased materials.

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.

Class Website: You are advised to check on class website prior to each class at
http://www.okstate.edu/elec-engr/faculty/yen/fall06.html

for important information, such as handouts, homework assignments, schedule changes, old exams and etc.