ECEN 4413
Automatic Control Systems
Spring 2012
Syllabus

Time: Tuesday/Thursday 10:30AM-11:45AM

Place: Cordell 127 (Stillwater) and NCB 213 (Tulsa)

Prerequisite: ECEN/MAE 3723-System/Controls I

Text: *Automatic Control Systems*, John Wiley, 2010
                            9th Edition, Farid Golnaraghi and Benjamin C. Kuo

References: *Linear Control Systems*, McGraw-Hill, 1993
                              Charles E. Rohrs, James L. Melsa and Donald G. Schultz
                            Modern Control Systems, Addison Wesley, 1995
                              7th Edition, Rchard C. Dorf and Robert H. Bishop
                            Modern Control Engineering, Prentice-Hall, 1997
                              3rd Edition, Katsuhiko Ogata
                            Control Systems Engineering, John Wiley, 2000
                              Norman S. Nise
                            Feedback Control of Dynamic Systems, Prentice-Hall, 2002
                              4th Edition, Gene Franklin, David Powell and Emani-Naeini

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 2:00-5:00PM;
                            or by appointment only

TA: To be finalized by Department

Objectives: To study the fundamental theory of linear control systems
                            through mathematical analysis and numerical simulation.
                            The topics include
                            - review of mathematical foundation
                            - review of dynamic modeling
                            - model representations
                            - block diagram and signal-flow graph
                            - time domain analysis
                            - root locus technique
                            - frequency domain analysis
                            - *state variable analysis*
                            - stability
                            - control system design
                            - digital control system
                            - Matlab and Simulink

Grading:	10 Weekly Homework Assignments	**25%**
	Tentative schedule-	
	1/19, 1/26, 2/2, 2/9 (before the first midterm)	
	2/28, 3/6, 3/13, 3/27 (before the second midterm)	
	4/12, 4/19 (after the second midterm)	
	Spring Break: 3/20, 3/22	
	Midterm Exam 1 (February 23, 10:30AM-12:00PM)	**20%**
	Midterm Exam 2 (April 10, 10:30AM-12:00PM)	**20%**
	Computer Project (April 29, 5:00PM)	**10%**
	Final Exam (May 3, 10:00-11:50AM)	**25%**

A-90% above; **B**-78%-90%; **C**-68%-77%; **D**-58%-67%; **F**-57% below
Quizzes will be given throughout the semester and counted toward the final grade as bonus points; No makeup exams will be given.

Note: All exams are close books and notes. One-page note is allowed.

Drop and Add: The instructor will follow University, College and Departmental guidelines for drops and adds. Consult the class schedule book or Ms. Helen Daggs in Engineering South 202 for more information.

Attendance: Attendance record will be sampled randomly and will be counted toward your grade. Students will be expected to attend all classes. Habitual failure to do so will result in a reduced grade. 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 as stipulated in http://academicintegrity.okstate.edu/ There is a video clip at http://ra.okstate.edu/provost/academic/integrity.html that every student (and probably every faculty member) should watch early in their academic career. This video very clearly defines the different types of academic misconduct and summarizes methods to avoid these problems. Cheating on homework, quizzes or examinations, plagiarism and other forms of academic dishonesty are serious offenses and will subject the student to serious penalties.

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.

Class Website: You are advised to check class website at the Online Classroom and Community page at https://oc.okstate.edu/ regularly for important information, such as handouts, homework assignments, schedule changes, old exams and last minute announcements.