University of Central Florida
School of Electrical Engineering and Computer Science
EEL 3657: LINEAR CONTROL SYSTEMS

CATALOG DATA: PR: EEL 3123C. Control theory, transfer function modeling, Nyquist criteria, root locus, Bode plots, and Design of lead and lag compensation (Prerequisites by Topic: differential equations, Laplace transform techniques, dynamics, and circuits).

OBJECTIVE: This course is designed to develop understanding of the fundamentals of classical control theory. The emphasis is on stability and performance analysis of the systems represented by a scalar transfer function. Simple control system design will be also covered. The goal is to arouse the students' interests in the fields of Systems and Controls and to provide a solid background for engineering applications and for more advanced topics.

SEMESTER: Spring 2007 (Jan 8 to Apr 23)

CLASS SCHEDULE: MWF 8:30 – 9:20 A.M., ENG I Room #427

INSTRUCTOR / EMAIL: Dr. Chan Ham, cham@mail.ucf.edu

TELEPHONE: (407) 882-2283 and (321) 452-9834 (Kennedy Space Center)

CLASS WEBSITE: http://pegasus.cc.ucf.edu/~cham/eel3657.htm

OFFICE & HOURS: Engr III #257; Mon 9:30 AM ~ 12:00 P.M. (Appointment is required for a meeting outside the specified office hours),

WITHDRAWL DEADLINE: March 2, 2007


Modern Control Systems, R. Dorf and R.H. Bishop, Prentice-Hall

HW Assigned regularly. It is due at the beginning of the class. No late homework will be accepted. Students are encouraged to confer on homework, and also encouraged to consult with the instructor during the office hours. Just don’t copy your homework from solution manual or somewhere else.

GRADER Al-Joumayly. Contact information and office hours are posted on the class website; Possible revision of homework grades may be discussed within one week from the return of corrected homework, and the decision will be made by the grader assigned by the department.
EXAMS  The schedule will be announced at least one week in advance. Closed book/closed notes unless otherwise specified. The final exam will be comprehensive.

QUIZZES  Not announced, 20~50 minutes in length. **No make-up for unexcused absence**

S/W  MATLAB is a very useful tool available for classical control system analysis and design. For the introduction, [http://www.mathworks.com/academia/student_center/tutorials/](http://www.mathworks.com/academia/student_center/tutorials/) You may also refer to the Word document entitled “The Application of Matlab to Control Systems Analysis” for an explanation of several Matlab commands at [http://classes.cecs.ucf.edu/eel3657/haralambous](http://classes.cecs.ucf.edu/eel3657/haralambous) Also, following website provides a tutorial of control system [http://www.engin.umich.edu/group/ctm/index.html](http://www.engin.umich.edu/group/ctm/index.html)

TOPICS:

GRADING:
- 2 Tests & Final 35 % each **(Best 2 out of 3)**
- Homework 10 %
- Quizzes/Attendance 20 %
- Bonus 5 ~ 10 % (may be considered individual basis)

(Optional Project and/or higher weighting of the final, etc)

Possible revision of test grades may be discussed immediately following the return of the test papers. With “Best 2 out of 3” arrangement you may elect either to drop or not take—regardless of your reason—any one of the three scheduled exams. Letter grades will be assigned as follows: $A \geq 90$, $87 \leq A- < 90$, $84 \leq B+ < 87$, $80 \leq B < 84$; etc. Keep track of your grades & records of your exam and homework. **Any rules/revisions regarding grading but not specified in this syllabus are posted on the class website.**

GENERAL COMMENTS:
There will be absolutely no makeup test in order to guarantee the course grade being fair to every one in the classroom; one has to take the same test in the same time as everybody else. All tests are closed book and notes (especially, final test & pop quizzes). The textbook may not be followed exactly. Attendance to class is not mandatory. Questions during class and office visits are strongly encouraged.

ESTIMATED CONTENT: Engineering Science: 2 credits or 66.67%; Engineering Design: 1 credit or 33.33%.