Attention Electrical Engineering and Computer Engineering

>>> students!!! PLEASE PASS THIS INFO ON TO YOUR BUDDIES!! The EE 103, signals and systems, course will be offered in spring quarter on an experimental basis by slightly changing the teaching approach. A NEW TEXT IS REQUIRED! SEE BELOW.

>>> Hopefully student learning and grades will go up. This is to encourage students to take this course early in their college curricula. However, the requirement to have taken EE 101 will be strictly enforced.

The EE 103 is experimental in teaching approach, and will be evaluated for its effect over the summer. The teaching approach is now to incorporate hands-on computer simulation into the mathematical content of the course so that students can see the connection between math and engineering and be able to use math as a tool effectively in their future courses and work experiences. The faculty would greatly appreciate student input on this experiment.

>>> The EE 103 course will be changed in a number of ways:

>>> 1. A lab, EE 103L, is required of all EE students and strongly recommended for mechatronics CMPE students. Other students can take it as a reward in course credits for refreshing their knowledge of MATLAB and SIMULINK, and applying it to systems problems. There will be 3 sections of lab, with 8 experiments, of which 4 will be solely on the computer and the others will involve hardware such as a spectrum analyzer, filters, sample and hold circuits, etc., in addition to a computer.

>>> 2. A new text will be used, and MATLAB homework problems will be assigned to supplement the mathematics. The text is THE THIRD EDITION of
"Fundamentals of Systems and Signals Using the Web and MATLAB" by E. W. Kamen and B. S. Heck, Pearson/Prentice Hall, ISBN 0-13-168737-9. We insist on the 3rd edition because that incorporates the MATLAB necessary for the course, and earlier editions DO NOT.

>>> 3. Students will be required to buy the student version of MATLAB and bring it to class on their laptops to lectures, labs, and to the exams. We are working on ways to alleviate this expense for students who cannot afford to do this.

>>> 4. The course will cover both discrete and continuous time systems, whereas before the emphasis was mainly on continuous time.

>>> 5. The lab will be run on a fun theme, not requiring onerous reports, but merely filling out blank spaces on lab forms provided. This will emphasize the connection of mathematics to physical quantities. The mathematical requirements of the overall course will not change. We will have a very competent teaching assistant to help out in the lab. The instructor will also be present in the labs often.

>>> 6. The bookstore has been alerted to buy enough texts and MATLAB for the spring, and a copy of the text has been ordered to be put on reserve at the library.

COURSE SYLLABUS
Course Description
The course will cover the following topics: Characterization and analysis of discrete and continuous-time signals and linear systems. Time domain analysis using convolution. Frequency domain analysis using the Fourier series and the Fourier transform. The Laplace transform, transfer functions and block diagrams. Continuous-time filters. Examples of applications to communications and control systems.

Course Outline
The following is a tentative course schedule.
• Week 1: Introduction, Signals and Systems, Signal types and characteristics
• Week 2: Time Domain Models of systems
• Week 3: The Fourier Series and Transform: definition, properties, applications
• Week 4: Fourier Analysis of discrete time signals.
• Week 5: The Fourier Transform: analysis of systems
• Week 6: The frequency response of linear time-invariant systems
• Week 7: The Laplace Transform
• Week 8: Transfer functions and stability
• Week 9: z transform
• Week 10: Sampling

Class Time and Location
Lecture times: M W 5:00- 6:45pm, Physical Sciences 114.
No class on W 11/11/2009 (Veteran’s Day)


1 Grading Policy
Course grade will be based on weekly homework assignments (20% of the final grade), midterm examination (30% of the final grade) and a final examination (45% of the final grade) and a few pop quizzes (5% of the final grade). You must get a passing grade on the final to pass the course.

Academic Dishonesty
Any confirmed academic dishonesty including but not limited to copying homeworks or cheating on exams, will result in a no-pass or failing grade. You are encouraged to read the campus policies regarding academic integrity. Examples of cheating include (but are not limited to): Sharing results or other information during an examination. Working on an exam before or after the official time allowed. Submitting homework that is not your own work. Reading another student’s homework solution before it is due. Allowing someone else to read your homework solution before the assignment is due.

For more details see the Official UCSC Guideline on Academic Integrity.