

**UNIVERSITY OF CALIFORNIA, SANTA CRUZ**

Department of Electrical Engineering

**COURSE SYLLABUS****Course Description**

The course will cover the following topics: Characterization and analysis of 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: Impulse response and convolution
- Week 3: The Fourier Series: definition, properties, applications
- Week 4: The Fourier Transform: definition, properties
- Week 5: The Fourier Transform: applications
- Week 6: The frequency response of linear time-invariant systems
- Week 7: The Laplace Transform
- Week 8: Transfer functions and stability
- Week 9: Sampling and its applications
- Week 10: Analog Filters

**Class Time and Location** Lecture times: M W 5:00- 6:45pm, Physical Sciences 114.

First lecture: M 9/28/2009; Last lecture: W 12/02/2009.

No class on W 11/11/2009 (Veteran's Day)

**Text Book** L. Phillips, J. Parr and E. Riskin "Signals, Systems and Transforms" (Fourth Edition) Prentice Hall, 2008, ISBN: 0131989235.

## **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.