1. **Number and title of course**: EECS 128, Feedback Control.

2. **Course objectives**: The objective of this course is to introduce the theory of analysis and synthesis of continuous and discrete time linear feedback control systems. Both frequency domain and state variable techniques are discussed.

3. **Topics covered**:
   - System Modeling
   - Properties and specifications of feedback systems
   - Root-locus design Method
   - Nyquist Stability Criterion
   - Compensation
   - State space formulation
   - Pole placement design
   - Estimator design
   - Analysis of discrete systems
   - Discrete state-space design method
   - Properties of Operational Amplifier Circuits
   - Oscillator design
   - System modeling and linearization
   - Root Locus design procedure
   - Compensation and circuit realization
   - Phase-Locked Loop design
   - State feedback controller design and computer simulation

4. **Relationship of course to program objectives**: This course requires students to analyze and solve engineering problems through application of fundamental knowledge of mathematics, science and engineering. They learn to solve challenging engineering problems. To complete the lab assignments they must collaborate with other members of their team and communicate their ideas effectively. They learn modern skills and techniques.

5. **Prepared by**: Laurent El Ghaoui (3/27/06)