

University of Massachusetts Amherst  
College of Engineering  
Department of Electrical and Computer Engineering  
COURSE OUTLINE AND SYLLABUS  
(on campus)  
<http://tennis.ecs.umass.edu/ece580-fall04>

- CourseName: ECE580, Feedback Control Systems
- Time/Place: TuTh 11:15AM-12:30PM, Marcus 106 (Studio A)
- Instructor: Weibo Gong, 211E Knowles Engineering Building
- Phone/E-mail: 413-545-0384, [gong at ecs.umass.edu](mailto:gong@ecs.umass.edu)
- OfficeHours: TuTh 12:30PM-1:30PM
- Prerequisites: ECE313
- Credits: 4 Units
- Textbook: *Feedback Control of Dynamic Systems, 4<sup>th</sup> Edition*  
G.F. Franklin, J.D. Powell, A. Emami-Naeini, Prentice-Hall, 2002.
- Objective: The course develops the methods for analysis and design of systems, whose dynamic behavior can be modeled by linear differential equations with constant coefficients. Time domain analysis and frequency domain techniques are presented. These are frequently referred as "Classical Control" methods.
- Grading: For on-campus students:  
Homework: 15%; Midterm Exam: 35%  
Lab: 10%; Final Exam: 40%
- For off-campus students:  
Homework: 25%; Midterm Exam: 35%; Final Exam: 40%
- Topics Covered: Introduction. Mathematical Descriptions of Systems. Dynamical Equations and Their solution. Feedback Configurations. Stability. Transient Response Analysis. Root Locus. Frequency Response Analysis. Design.
- References: Modern Control Engineering, K. Ogata, Prentice-Hall