

There are a number of lockers on the 2nd floor of the MEB, in the center hallway.

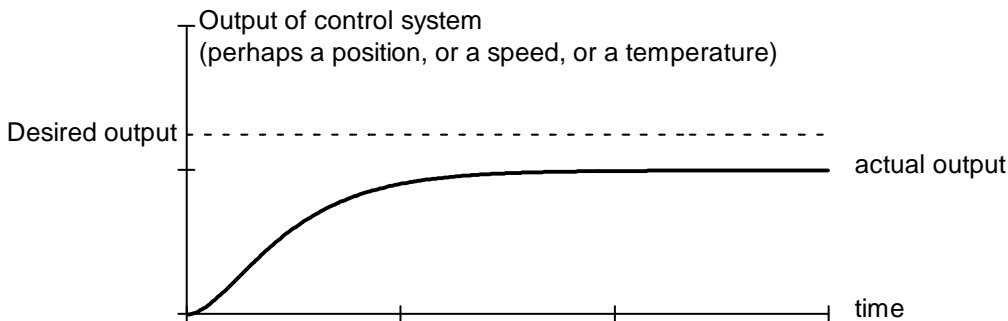
These lockers have slots cut in their doors so that homework and lab notebooks can be dropped through the slots.

Turn in your homework in the locker marked "ECE 3510 Homework". Homework is due by 5:00 p.m. on the due date.

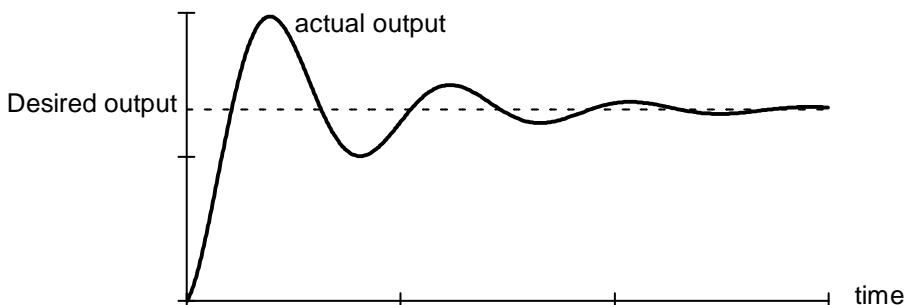
Graded homework, labs and exams will be returned to your mailbox in 2101 MEB

## Identify Feedback Systems

1. Listen carefully to lecture 1 and/or read Chapter 1 of the Bodson text.
2. Look for feedback systems around your house, school and where you work. Think about the subsystems within your computer, your car, and your entertainment equipment. Think back to previous classes and try to identify feedback systems that were used to stabilize circuits. (You don't need to write anything down here, you'll do that in the next problem.)
3. Identify at least 2 different feedback systems found around your house, school and where you work. For each of these systems:
  - a) Draw a system diagram, identifying each of the parts (controller, plant, feedback sensor, and possibly others). If you're not sure how the system works or how individual parts of the system work, make educated guesses— think how you would make such a system work.
  - b) Identify the input on the drawing (may be zero).
  - c) Identify the output (response).
  - d) Identify the feedback signal.
  - e) What would happen if this system did not respond accurately to the control and the output looked like that shown below (or like Figure 1.2 b in the Bodson text)?



- f) What would happen if this system responded to the control with overshoot or ringing like that shown below (or like Figure 1.2 c in the text)?



4. Repeat problem 3 for a feedback system outside of your normal environment. (just one)
5. Repeat problem 3 for a natural feedback system, that is, not made by man. (just one)