## **System Control**

Fall 2010

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| Weekly Plan |  |            |
|-------------|--|------------|
| Week        | Topics   | comments   |
| 1           | Introduction, some examples of control systems                 |            |
| 2           | Components of a control system, modeling, Laplace transform    |            |
| 3           | Transfer functions   |            |
| 4           | Stability, step response, Routh's criterion                    |            |
| 5           | Sensitivity, disturbance rejection                             |            |
| 6           | Control design examples  |            |
| 7           | Root locus, lead and lag compensation                          |            |
| 8           | Review and Midterm   | Midterm    |
| 9           | Introduction to frequency response; interpretation, bode plots |            |
| 10          | Nyquist criterion, applications, gain and phase margins        |            |
| 11          | compensation   |            |
| 12          | Bode gain-phase margin   |            |
| 13          | State space methods  |            |
| 14          | Controllability, observability                                 |            |
| 15          | Reference tracking, observer                                   |            |
| 16          | Review and Final   | Final Exam |