MAE 4730
Automatic Control

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Office hours: TBD

Class: MEC TR 9:30-10:45, MEC 345

Overview: Control systems are fundamental to almost all the technology that we enjoy today. They are critical in automobiles, aerospace, manufacturing, telecommunications, materials processing, and biomedicine. Most control systems operate on the principle of feedback, the comparison of the system's behavior to its desired behavior. This course is an introduction to feedback control, mainly from the perspective of the frequency domain, although we will try to introduce some state-space topics as well. The emphasis will be on techniques that can be used to develop control algorithms. As such, proofs of important results will largely be omitted. The course will make extensive use of Matlab (including Simulink); students should make sure they have access to this code.

Text: N.S. Nise, Control Systems Engineering, 6th edition, Wiley.

Grading: Homework will be assigned on a bi-weekly basis. Solutions will be posted on the course web page. Students will grade their own work according to guidelines and submit their graded work to the instructor. Midterm and final exams will be given. These will be open book and open notes. Students will also work together on hands-on control systems projects. Final grades will be determined from the following weightings: Homework – 20%, Midterm – 20%, Final – 20%, Projects – 40%.