**ENME 621**

Robust and Adaptive Linear Control — Prof. M. Krstic

# PROJECT

If theory is not your cup of tea, this is your chance to excel.

1. Read papers in
   (a) ASME J. Dynamic Systems, Measurement, and Control
   (b) AIAA J. Guidance, Control, and Dynamics
   (c) IEEE Transactions on Control Systems Technology

   or your other favorite journal or conference. You can also select a project topic from your thesis interest.

2. Select a problem with unmodeled dynamics or uncertain parameters. The uncertainty can be due to any of the following factors: inability to measure/identify some parameters or dynamics in the system, system varies with operating conditions, nonlinear system—linearization varies with the operating point, you intentionally neglect some dynamics (e.g., actuator dynamics or a delay) for the sake of simplification. Your model can be either linear or nonlinear (I encourage thinking beyond this course).

3. Come and talk to me when you feel you found a nice problem but before you invest any serious work into it.

4. Submit a 3(typed)–5(handwritten) proposal explaining the problem. Make sure to provide (a) the control objective and (b) a description of uncertainties.

   Attach the paper that motivates your project.

   Deadline: end of October.

5. Design a robust or adaptive controller. Simulate and compare with a classical design. Discuss the results—what was achieved with a robust/adaptive controller.

   Submit the project report by **Monday, December 11** (this is a hard deadline).