For this project you will select some system that interests you. You will form a mathematical model of the system. You will then design a control system so that the system performs a desired task. You must determine some set of performance specifications of the system such as rise time and settling time. You must analyze the performance of the system when the system parameters are different than what you have modeled. For example, if you are dealing with a crane that has a 30 ft. suspension cable, you must determine the behavior when the cable length varies between say 25 ft. and 35 ft. You will write a report (no more than 3 pages of text, but as many figures and as much MATLAB code as you want) describing your analysis and results.

As a first step, you will select a system and form a mathematical model. You must also decide what task the system is to perform. This should be summarized on one page and turned in on Thursday 11/4/04. I will look this over and make sure your proposal is acceptable. This will be 2% of your course grade. It will be graded as pass/fail (2% or 0%). No late proposals please. You will then have until Monday, 11/29/02 to complete the project. As a general guideline, the system you propose to study should have dynamics of at least 2nd-order, but no more complicated than 6th-order.

Requirements:

Thursday 11/4/04
Project Proposal (2 %)
- system model and task

Monday, 11/29/02
Final Report (8 %)
- Introduction, system model, performance specifications, control system design, sensitivity analysis, conclusions, and MATLAB code,