

## **ME6404: Final Project**

### **Assigned Friday, 10/28/2016**

Your team will perform a control system implementation project of your own choosing. The project should have some component that is completed on a real machine; however, a significant component of the project can be performed in simulation. The project can use any of the machines used in the course, or any other machine available to your team. The project can be based on any control method, but the techniques should be related to the material in this course. The project should have the following components:

- 1) Clear statement of the system and performance objectives
- 2) Development of a system model
- 3) Design of a control system
- 4) Robustness analysis of the control system
- 5) Hardware verification

#### **DELIVERABLES**

##### **1) A short project proposal**

**Due:** Wed., 2 November at the beginning of lecture

The class will have a short brainstorming session on your proposal to suggest problems and possible solutions. The proposal should be *at most* 1/2 page of text and 2 figures. **Put a condensed version of the proposal on 2-3 Powerpoint slides so that you can present it to the class.**

##### **2) Project update by team**

**Due:** Monday, 28 November in lecture

Prepare a 5-minute presentation to the class. Clearly state your accomplishments and what significant challenges remain.

##### **3) Update report by each student (To be done individually)**

**Due:** Monday, 28 November by 5:00pm (Submit via email)

i) Write a paragraph describing the status of the project. ii) Evaluate each of your teammates by assigning them a rating from 1-10 (10 = best). Justify your evaluations with 2-3 sentences of explanation. iii) Submit a list of the 3 most important pieces of feedback that you have received on your lab reports this term. Include these lists as an appendix to your final project report.

##### **4) Presentation of your completed project (7 minutes at most)**

**Due:** Monday, 5 December in lecture

Your team presentation will be evaluated by judges. This evaluation will determine 5 out of the 20 possible points for the project.

##### **5) Written report on your project (1 report per team)**

**Due:** Wednesday, 7 December by 1pm (Submit via email)

Be concise and only include figures that demonstrate an important result. Insert the figures into the text near where they are first cited. **The report is limited to 8 pages, including figures and tables.** Use 1" margins on all sides and use a 12pt. font size. Place computer code in an Appendix and your lists of important feedback that you received this term, but nothing else should be put in the appendix. Appendix pages do not count against your page limit.