Examination Feedback for EEE6201 – Advanced Control of Electric Drives
Spring Semester 2015-16

Feedback for EEE6201 Session: 2015-2016

Feedback: Please write simple statements about how well students addressed the exam paper in general and each individual question in particular including common problems/mistakes and areas of concern in the boxes provided below. Increase row height if necessary.

General Comments:

Questions involving numerical calculations were in general well answered. Most students do not provide derivations or explanations and limit themselves to the application of a formula.
Many failed to 'describe' a control algorithm even when this was explicitly requested.

Question 1:

1a: Most students failed to recognize that the number of motor poles is irrelevant in answering the question.
1b: Many did not correctly correlate the resolver signals in Fig. 1.b to the angle as requested.
1c: Answered correctly by the majority of students
1d: Although many drew a correct block diagram, very few described its principle of operation as requested

Question 2:

2.a: Although many draw a correct block diagram for the current controller, very few described its principle of operation as requested
2.b: Most students applied the formula correctly but only few showed the derivation
2.c: Very few sketched the requested frequency responses. Many drew time-domain responses instead.
2.d: Only a small minority seemed to understand the frequency-domain based design

Question 3:

Approached correctly by most students. However, some did not correctly identify open (i=0) and short (v=0) circuit conditions.

Question 4:

A number of students failed to understand that Fig. 4 shows 'normalised' Torque in per unit, rather than actual value. Some derived the maximum torque condition using the MTPA formula rather than simply referring to Fig. 4.
4.d: Very few showed an understanding of these operating conditions when both voltage and current constraints need to be considered

Question 5:

Only 12% of students chose to answer this question despite being a straightforward application of the theory and requiring the least amount of calculations.

Question 6:

Most students answered reasonably well. Although many drew a correct block diagram, very few described its principle of operation as requested.
Some failed to take the number of poles into account in the calculation of electrical speed.

Question 7:

Question 8: