Control Engineering

Handout – Online Laboratory 11

Name: *Colda Andreea Ariana*

Group: *30332*

A multivariable system with 2 inputs (u1 and u2) and 2 outputs (y1 and y2) is given by the following transfer function matrix:

Design the controllers such that:

* for y1(s) an overshoot of 10% and a settling time of 5s are obtained
* for y2(s) an overshoot of 5% and a settling time of 15s are obtained

Analyze the closed loop dynamics and verify that the performance specifications are met.

*Specify the input/output pairs*

*y1-u2, y2-u1*

*Add the obtained controller for each pair*

*12.72 s + 2.544*

*Gc1 = ---------------*

*s^2 + 2.667 s*

*0.6856 s + 0.06856*

*Gc2 = ------------------*

*s^2 + 0.5714 s*

*Add graphical proof of the performance (y1, y2 plots).*



