

CSCE 274 Fall 2021

Homework 6 (3% over the final grade)

Assigned: November 02, 2021

Due: November 09, 2021

Instructions

Please read carefully the following questions and make sure to give the answers asked for. Don't give a beautiful answer to the wrong question. If you have any doubts, please let me know.

The document containing the answers should be uploaded on the CSE Moodle (<http://dropbox.cse.sc.edu>) and should have the following characteristics:

1. Header with the code of the class, the semester and year, the homework number, and your name.
e.g., CSCE 274 Section 1 Fall 2021 – Homework 5 – Ibrahim Salman
2. Your answers, clearly identifying the answered assignments.
3. The name of the file should be in the following format:
csce274_fall2021_<hw#>_<last_name>.pdf
e.g., csce274_fall2021_hw5_salman.pdf

Question

A discrete PI controller is used to control a robot. The setpoint is 36, the proportional and integral gains are 2 and 4, respectively. The sensor that is able to measure the state is sampling every 3 seconds. When the controller is executed, the first four states are 33, 37, 38, and 36. **Compute** the output of the controller after the fourth sensor reading. **Show** your work.