

Freshman Engineering Project: Bipedal Walker

Clemson University, Engr 1900

Fall 2013

Goal

Your team must design, build, and program a robot with Matlab and your Lego Mindstorms kit to walk forward on two legs.

Assessment

Your group's project will be assessed by the following four items:

I. A one-page progress report due November 1. You may email the TAs with your submission, one per group, or hand in a hard copy at lab hours. The progress report should discuss what you accomplished so far, what problems you encountered, and what you plan to do next to finish the project.

II. A two-page final report due November 22. Turn this in the same way as the progress report. This report should include the project goal, discuss what you did, talk about the design and construction of your robot, outline the structure of your code, explain what obstacles you overcame during the project, and conclude with what you learned.

III. A presentation on your project given to a TA by November 22. You can give a 5 minute presentation to a TA at lab hours demonstrating how your robot and code work, you can submit a video presentation, or you can submit a PowerPoint presentation with a voice-over by email to the TAs.

IV. Completion of project. That is, did you design, build, and program a bipedal walker? This will be checked off just like the five labs. In order to get credit for completion, you must turn in your robot kit, with the robot fully disassembled and parts put in the plastic bags that came with each kit. All kits must be returned by Thanksgiving break (Wednesday 27 November 2013).

Robot race

In addition to these items, there will be a BIPEDAL WALKER ROBOT RACE! Prizes will be awarded to the top finishers and the best design as chosen by the TAs. So, come and pit your design against your classmates'. The race will be held in the Holtzerndorff project lab (B-01) 5pm-8pm on Thursday 21 November 2013.