ENGR 122  Homework 10

NOTE: This is a team assignment. Turn in only one paper for the entire group. Use non-engineering format for all problems.

Your finished design is due seven class periods from now, so your team needs to take the concept that you have developed (or a modified or new concept) and move as quickly as possible toward a working prototype.

1. In class 11, you presented your design idea to the class. You also worked to determine the sensors and other parts needed to implement your project. If you haven’t done so already, meet with your instructor so you can agree on the sensors or other parts that you will “check out” from the University. Obtain these parts before the next class (your instructor should have provided the time and location for parts distribution). Create an Excel spreadsheet listing the sensors and parts that you will obtain from the University. Include a brief part description, the part numbers, the vendor, and the part cost in your spreadsheet. Also include a column designating whether or not you have received the item yet.

2. Determine the other parts that you need to move forward. Do you need more foam core, sheet metal, paint, tape, wood, screws or other items? Create an Excel spreadsheet listing the items that you need to purchase yourself. In your spreadsheet, provide a brief description of the item, the part number, the vendor, and the cost (you may not know all of this information). Also include the date that you expect to acquire the item (remember shipping). You will likely discover that you need additional items as the design unfolds.

3. Build your second prototype. As you design / build the prototype, think about how your sensors, the Arduino, your actuators, and other parts will be included in the design. It’s OK to go ahead and start placing any sensors that you have already on the prototype. Remember that this prototype should be a step forward from what you brought to class last time. Your 3rd prototype will be due class 14 (about one week), so do the things needed to be moving in that direction. Remember that it is still early in the design process, so retain some flexibility to make changes to your concept if needed. Take a picture of your prototype, include the picture for problem 3 in your homework, and bring your prototype to class.

Go ahead and include the two Excel spreadsheets as well as the photo of prototype 2 in your electronic design journal. You won’t need to turn in this journal until the project due date.