

Assignment 14: Materials, Tools, and Budget

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1 Materials

Use this section to list all the materials you'll need for this project, with a brief description of why. This description can be as simple as "requirement for subsystem XYZ to function properly" or as complex as "this item is superior to similar items on market for x,y,and z properties. This will assist us in the completion of A and B criteria." The level of description is up to you, but you should be able to justify the purchases we need to make.

1. Steel: For testing of the sensors and calibrating
2. Flux sticks: needed for stick welding
3. Screws: Needed to assemble the systems
4. Wire: This will be needed to connect all the sensors to the Arduino
5. Wireless earbuds: To give feedback response to the welder on what he should do to improve his weld
6. Arduino Mega: For the input of sensors and management software that packs up the Bluetooth packets for transmission to the iOS app
7. Gyroscope Sensor: This sensor will be attached to the handle of the welding clamp to measure travel motion.
8. Commercial 400A AC/DC Clamp Meter- this will be used to measure the current and voltage going through the lines
9. Welding Jackets and Gloves- will be needed for our protection
10. Auto Tinting welding helmet- will help us be able to start the weld since we are beginners
11. Bluetooth Add-on Card: This will give the Arduino Bluetooth capability for transfer to ios app

2 Tools

In this section, list the tools you will need to complete your project. This should include any software licenses you will need to complete your project. Again, a rationale for the need is necessary.

1. Unity Student Plan: This is used to help create the app on a windows device and not purchase a macbook to help
2. Xcode: The code to used to program the app for the background to complete the calculations
3. git repository - needed to be able to collaborate on the code
4. Apple Developer Account- this will be needed to create our app and test it
5. Welder: to practice and see how we how to model our project off of

3 Budget

In this section, compile a table for the budget you'll need to complete this project. Please note that we will be sending out a procurement form, so please keep track of where you need to go to buy these items. You can add a list of links under the table to do this.

Item	Manufacturer	Cost per Unit	Num. Units	Total Cost
Steel	Joe	0	-	-
Flux Sticks	On Campus and Joe	0	-	-
Screws	On Campus	0	-	-
Wire	On Campus	0	-	-
Wireless Earbuds	JBL-California, US	29.99	1	29.99
Arduino Mega	Arduino-Italy	48.20	1	48.20
Gyroscope	Adafruit-New York, NY	17.95	1	17.95
Clamp Meter	Aicevoos-Wuhan, China	39.99	1	39.99
Welding Jacket and Gloves	Joe	0	-	-
Auto Tinting Helmet	Joe	0	-	-
Unity	Unity-California, US	0	-	-
Xcode	Apple-California, US	0	-	-
Apple Development Account	Apple- California, US	0	-	-

Welder	On Campus	0	-	-
Bluetooth Add-on Card	DSD Tech-Wisconsin, US	9.99	1	9.99
Final Total				\$ 146.12

Links:
 JBL Wireless Headphones
 Unity Student Software
 Arduino board
 Gyroscope
 Current Clamp
 Steel Testing
 Welding Jacket
 Welding Gloves
 Auto Tinting Helmet
 Xcode
 Apple Student Developer Account