Minutes 1

Date: 6/20/18
Venue: GJ Design Suite
Time: 12:30

I. Product Requirements Document:

Make the objective be the outcome of your project, not just the completion of this document (probably something similar to the problem statement)

Dramatically expand references. Include the wiki site of the last team, various user manuals, and references from class.

Towards the front of the document, include a map/layout of the current cell for reference throughout.

Add Denso specific terminology related to programming the controller as well as the pendant.

On what the device should do... include some of the specifics about different part manipulations/modifications (i.e. material handling, fastener insertion/removal, optical scanning, acceptance of mixed load of parts, final storage by part type).

Take a look at UL (and Boeing company) recommendations for collaboration between robots and humans. There are probably some principles about safety that we need to follow. Ankit may have addressed some of these.

On the reliability side include something about collision avoidance.

II. Interview Questions:

Objective is to integrate two arms in a mini assembly line, illustrating supervisory control

Freedom to change anything from previous projects

Budget of about 1000 dollars

If we use a screwdriver, consider Arduino intervention

Look up: FANUC, DENSO, KUKA, small manufacturing lines

Use the controller to manually get coordinates

Should design different tools to utilize during process

Minutes 2

Date: 6/27/18
Venue: GJ Design Suite
Time: 12:30

I. **Product Requirements Document**
Elaborate more on objective
Explain what the references are/why they are important
Input more acronyms for the project
Include a spot to explain some of the code used
User-Interface (4.1) vs User-Interface (7.2)
Reliability Requirements (5.7) – Emergency Stop

II. **Design Ideas**
Idea of Lego/Duplo/Mega Blocks assembly
Build or research products for pushing pieces together
Potentially stacking cups – one robot does one row, the other does next, etc.

III. **Gantt Chart**
Should have a "lead" for each sub-project

IV. **SEL Inspiration**
One arm pushed buttons, maybe we are thinking too complex
Screw station seemed to detract from the goal of the project

Minutes 3

Date: 7/3/18
Venue: GJ Design Suite
Time: 12:30

I. **Product Requirements Document**

Missing from Document:
Process Description
Fixtures to be Designed
Software Operations
Include Goals of the project in object

II. **Design Idea**

Process essentially:
Incoming Parts queue…Sort by type of part after scanned…loops until all parts are sorted…Pick and Place Bottoms from sorted parts…Pick and Place Tops onto Bottoms…Pusher tool assembles pieces…Pick and Place Assembly into Finished Parts Location.
Use two parts: Male and Female

III. **Design Validation Plan**

Finish Product Requirements, then look into this more

IV. **WikiPage**

Include Minutes/Agendas, Team Contract, PRD, Schedule, Budget at bottom
Process Learning
What goals of project are
How this project will benefit future

V. **Portfolio**

Send layout via email by Monday