**Weekly Meeting Questions**

1. PCB Questions
   1. Can we use analog pins and digital pins on the microcontroller? We have 11 input/outputs
      1. 2 pedals, 3 motors, and possibly 6 for LCD
   2. Which jack component for the wall adapter on the PCB?
   3. Do we need a voltage regulator if we can use 5v for everything?
   4. Where do we need decoupling capacitors? Just by the microcontroller?
2. Design Document due Feb 23 11:59 PM
   1. Question about Physical Design, what is the difference between this and the visual aid?
3. Proposal Revisions due Feb 24 11:59 PM
   1. Clarification on comments a and c, should we remove component specifications in c?
4. Team Contract due Feb 24 11:59 PM
   1. Check our team contract
5. Anything else
   1. First-round and second-round pcb orders? What is this and does this mean we have 2 chances to submit?

**Office Hour Questions**

1. What has to be on the pcb? How much can be done by an arduino?
   1. Microcontroller subsystem
   2. Voltage regulator
   3. On/Off switch
   4. Foot pedals
2. PCB cost?

**Motors and microcontroller**

ISR capabilities specifically

AVR chip is nice, read datasheet

Everything has to go to the pcb by the end: sensors, microcontroller, and buttons

**AC to DC converter - be wary about the barrel connector**

Motor - 6V

Microcontroller - 3.3 or 5V

Foot pedal - have to test possible all 12

**Linear Regulator - LM117**

theta Ja is provided in datasheet

Paper calculation for overheating

Buck converter for motors

Integrated devices for buck converter

<https://www.youtube.com/watch?v=a1DvWeJfzk4>

<https://www.resna.org/sites/default/files/legacy/conference/proceedings/2004/Papers/StudentDesign/OTH/PageTurner.html>

<https://courses.engr.illinois.edu/ece445/getfile.asp?id=19490>

<https://courses.engr.illinois.edu/ece445/getfile.asp?id=19775>

<https://courses.engr.illinois.edu/ece445/getfile.asp?id=19488>

<https://www.youtube.com/watch?v=mxqxxQXVkts>

<https://www.youtube.com/watch?v=ygrsIqWOh3Y>

<https://www.resna.org/sites/default/files/legacy/conference/proceedings/2003/Papers/SDwinners/Bailey2_TSP.htm>

<https://www.youtube.com/watch?v=dOa3570JM2M>