

EE/CprE/SE 492 BI-WEEKLY REPORT 5

March 19th – April 1st

Group number: sdmay23-13

Project title: Prosthetic Arm

Client &/Advisor:

Dr. Santosh Pandey

Team Members/Role:

Erik Raman — Software

Jack Vetsch — Electrical

Jacob Eisbrenner — Mechanical/ Electrical

Scott Bolek — Electrical

Sean Gray — Software/Electrical

Jeremy Wallace — Electrical

Leo Forney — Software

Bi-Weekly Summary:

Continued work on the instrumentation amplifier for the emg circuit. Worked to finalize BMS circuit design.

During the time period:

Leo and Erik:

Worked on setting up simulations and scenarios for the motors that would be comparable to the signals they would receive from the microprocessor and amplifier being generated by the emg pads. Additionally accumulating header files from the BIOS that we can use to initialize the pins that are needed for I/O.

Jacob:

Completed testing and simulation of the EMG amplifier. Finished revisions on Motherboard PCB. Designed BMS PCB, ordered PCB parts, and began constructing the hand and other mechanical components.

Jack:

Integration of BMS and work on the driver board in KiCad for fabrication as well as kicad work for charging circuit.

Jeremy:

Worked on feedback response for prosthetic arm. Researched micro linear actuators and started work on testing documentation.

Sean:

Completed to work on the signal processing from the emg pads. EMG amplifier tested and functioning, work begun on recording signals for software crew.

Scott:

BMS circuit completed as well as work nearly finished on charging circuit for usb charging and data to motherboard

Pending issues

From now the only pending issue remaining seems to be scheduling time to finish integration of systems. Charging circuit needs to finish testing and printing

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this 2 week period</u>	<u>HOURS cumulative</u>
Jack Vetsch	Charging Circuit, BMS Work, Driver board	10	90
Jacob Eisbrenner	Forearm and Hand design, Motherboard, EMG, Driver board	42	246
Erik Raman	Software design, Motor control	4	72
Jeremy Wallace	Feedback Design, Documents	5	107
Leo Forney	Software design, Motor control	8	97
Sean Gray	EMG signals, amplifier design, Software design	5	82
Scott Bolek	Charging Circuit, Document updating, BMS Work	14	88

Plans for the upcoming weeks :

- Finish running simulations on our motors.
- Finish printing parts for prosthetic arm
- Finalize any pending orders.
- Continue work on EMG pad circuit