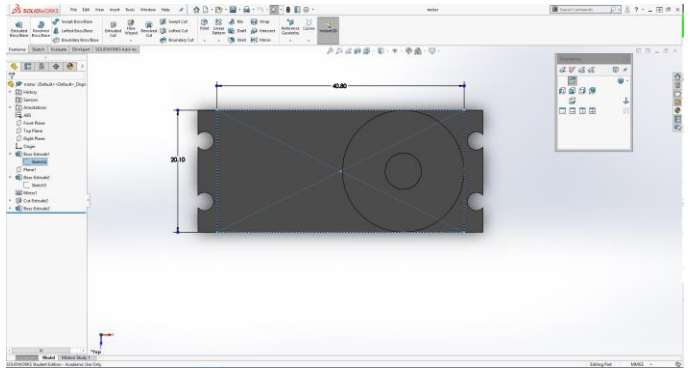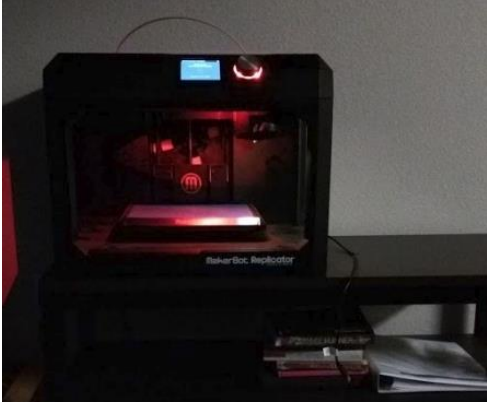# ACTION ITEMS

TEAM 12: Active Prosthetic Arm

Due Date:
Wednesday, February 13, 2019 5:30pm

The following are the Action Items from last week:

Team Member: Felicity Escarzaga

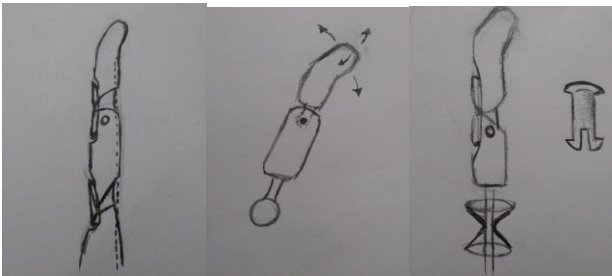| Action Item	Date Due	Date Completed	Result/Proof of Completion
Fix Prusa 3D printer to be able to create parts	Feb 6	In progress 2/30/19	
look into Dr. Oman's 3D printer during office hours) take 3D printer and material	Feb 6	2/5/19	
Create Solidworks File for new Motors	Feb 6	1/31/19	

Team Member: Antoinette Goss

Action Item	Date Due	Date Completed	Result/Proof of Completion
Retrieve 3D printer and materials for testing next week	Feb 6	2/5/2019	
Complete research for palm and consult Janelle for her placement of thumb	Feb 6	2/6/19	upon further discussion, the thumb placement will need to have the palm and socket component inside the palm that will be accessed using the same opening for the motor. Research links can be found below on the best ways to incorporate the thumb and palm opening. https://openbionics.org/#videos This is a wonderful resource for the makings of a ball and socket joint https://www.youtube.com/watch?v=EmAoqJQ49oQ Understanding of how nature incorporates the ball and socket joint https://www.youtube.com/watch?v=EmAoqJQ49oQ

Complete sketch for palm ideas	Feb 6	2/6/19	

Team Member: Janelle Broderick

Action Item	Date Due	Date Completed	Result/Proof of Completion
Complete Research for fingers	Feb 6	Feb 6	This involved researching the range of motion for the thumb and fingers. https://www.sensorprod.com/news/white-papers/2008-03_sha/index.php <table><tr><td>Joint</td><td>ROM</td></tr><tr><td>MCP adduction/abduction</td><td>40°</td></tr><tr><td>MCP flexion/extension</td><td>90°</td></tr><tr><td>DIP flexion/extension</td><td>100°–110°</td></tr><tr><td>PIP flexion/extension</td><td>80°</td></tr></table>

Action Item	Date Due	Date Completed	Result/Proof of Completion
Begin sketch work for thumb and fingers	Feb 6	Feb 4	
Work on and update website check	Feb 8	In Progress	The website will be updated by this Friday. The website will have all new documents and professional photos of the team members. https://www.cefns.nau.edu/capstone/projects/ME/2018/18F12_ActiveProsthetic/
SolidWorks CAD Design of Proximal Digits (2-4)	Feb 10	In Progress	The proximal digit (finger bone closest to the palm) Cad Design for fingers 2-4 (pointer through pinky). These proximal digits are all identical except in size. They will involve a hinge so the fingers can bend to grasp items.
SolidWorks CAD Design of Distal Digits (2-4)	Feb 10	In Progress	The Distal digit (finger bone farthest to the palm) Cad Design for fingers 2-4 (pointer through pinky). These proximal digits are all identical except in size. They will involve a hinge so the fingers can bend to grasp items.
SolidWorks CAD Design of Proximal Digit 1	Feb 10	In Progress	The proximal digit (finger bone closest to the palm) Cad Design for fingers 1 (Thumb). It will involve a hinge so the fingers can bend to grasp items.
SolidWorks CAD Design of Distal Digit 1	Feb 10	In Progress	The Distal digit (finger bone farthest to the palm) Cad Design for fingers 2-4 (pointer through pinky). This differs from the other fingers because it will incorporate a ball and socket joint rather than a hinge.

Team Member: Allison Cutler

Action Item	Date Due	Date Completed	Result/Proof of Completion

Design and print the forearm mold	Feb 13	Feb 11th	 • The mold is used for thermoforming the flat forearm pieces around
Begin design of forearm halves and possibly test print then	Feb 13	Feb 12th	 • Dimensions of the hinges and clips are off, so the pieces do not fit together. • These can still be used to test thermoforming around the mold
Begin Individual analysis • Determine what will be done as the analysis	Feb 13	Feb 10th	• The analysis will be coding wireless communication between the foot insole and the arduinos on the prosthetic arm • Includes research on XBEE and possible other Bluetooth communications in order to find what is doable • The analysis will be code and proof of code once the communication method is determined

The following are the Action Items for next week:

Team Member	Action Items	Date Due
Felicity	1. Continue Fixing Prusa 3D printer (Order custom Prusa extruder) 2. Order Servo Motors 3. Finish modifications for cuff and print	1. 2/13/19 2. 2/10/19 3. 2/12/19

Antoinette	1. complete CAD design of Palm and hinge 2. Possibly begin testing 3D printed model 3. Begin individual analysis	1. 2/10/2018 2. 2/10/2018 3. 2/13/2018
Janelle	1. Complete Research for fingers 2. Begin sketch work for thumb and fingers 3. Work on and update website check 4. SolidWorks CAD Design of Proximal Digits (2-4) 5. SolidWorks CAD Design of Distal Digits (2-4) 6. SolidWorks CAD Design of Proximal Digit 1 7. SolidWorks CAD Design of Distal Digit 1	1. 2/6/19 2. 2/4/19 3. 2/8/19 4. 2/10/19 5. 2/10/19 6. 2/10/19 7. 2/10/19
Allison	1. Thermoform forearm halves using the mold to test the practicality of both designs 2. Make alterations to designs based upon thermoforming test 3. Begin designing servo motor holder in SolidWorks 4. Work with Felicity on possible pulley mechanism between motors in arm and finger movement. 5. Start researching bluetooth communication possibilities	1. 2/20/2019 2. 2/20/2019 3. 2/20/2019 4. 2/17/2019 5. 2/20/2019