

Stair Chair: BME 200/300

Dates: 11/7/2024-11/14/2024

Client: Mr. Daniel Kutschera, PT

Advisor: Dr. James Trevathan

Team:

Matt Sheridan (Leader)

Dan Altschuler (Communicator)

Cody Kryzer (BSAC)

Luke Rosner (BWIG)

Problem Statement

Create a mechanical device that temporarily handicapped patients can use to ascend and descend 3-5 stairs. The device should be inexpensive to fabricate, as compared to competing powered stair lifts, and be easy to set up and take down, both inside and outside the patient's home.

Brief Status Update

The team is still waiting on materials to come on which has limited the amount of progress that can be made. In the meantime, we have begun to work on some of the final deliverables that we can start. This includes our poster and final report.

Weekly Goals and Accomplishments

- Team
 - Worked on plan for poster presentations
 - Started final report draft
- Matt Sheridan
 - Worked on poster
- Dan Altschuler
 - Worked on poster
- Cody Kryzer
 - Led meeting for the week
 - Worked on final report draft
- Luke Rosner
 - Started final report draft

Upcoming Goals

- Team
 - Complete assembly of scale model
 - Continue work on final deliverables
- Matt Sheridan
 - Assemble scale model
- Dan Altschuler
 - Help with scale model assembly
- Cody Kryzer

- Assemble scale model
- Luke Rosner
 - Help with scale model assembly
 - Work on final report

Project Timeline

Deliverable	Deadline	People Assigned	Progress
Initial Client Meeting	9/13	ALL	100%
Product Design Specifications (PDS)	9/20	ALL	100%
Individual Research	9/20	ALL	100%
Design Matrix Criteria	9/27	ALL	100%
Design Ideas	9/27	ALL	100%
Preliminary Presentation	10/4	ALL	100%
Individual Research	10/4	ALL	100%
Preliminary Deliverables	10/9	ALL	100%
Decide upon Final Design	10/9	ALL	100%
Finished Model of Final Design	10/25	ALL	100%
Show and Tell	11/1	ALL	100%
Final Prototype Prepared (by Thanksgiving break)	11/26	ALL	0%
Final Presentation	12/6	ALL	0%
Final Deliverables	12/11	ALL	0%

Materials and Expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	QTY	Cost Each	Total	Link
Category 1										
Surface-Mount Hinge	Hinges for connection of base and ramp plates.	McMaster- Carr	1798A3 1	McMas ter - Carr		11/1	2	\$9.62	\$19.2 4	https://www.mcmaster.com/products/hinges/
Pulley	Pulley for ropes to hoist design.	McMaster- Carr	3099T3 4	McMas ter- Carr		11/1	8	\$11.89	\$95.1 2	https://www.mcmaster.com/products/pulleys/pulleys-for-wire-rope-for-lifting/
Silver Anodized Aluminum—Grooved Rail Texture	Extrusion for support and framework.	McMaster - Carr	47065T 101	McMas ter - Carr		11/1	4	\$28.93	\$115. 72	https://www.mcmaster.com/47065T101-47065T413/
Diamond Tread Aluminum 1/8 inch Baseplate (1x1 and	Material for base and ramp plates	Metals Depot	P418	Metals Depot		11/1	2	\$18.92 (1x1) \$32.84 (1x2)	\$51.7 6	https://www.metalsdepot.com/al

1x2)

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									TOTAL:	\$0.00	