BME Design-Spring 2020 - Callie Mataczynski
Complete Notebook

PDF Version generated by

Aaron Wagner

on

May 01, 2020 @07:45 PM CDT

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Team contact Information

Callie Mataczynski - Feb 25, 2020, 4:52 PM CST

Last Name	First Name	Role	E-mail	Phone	Office Room/Building
Meyerand	Beth	Advisor	memeyerand@wisc.edu		ECB 2154
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Callie	Mataczynski	Leader	cmataczynski@wisc.edu	(715) 551-7409	
Eric	Arndt	Communicator	earndt4@wisc.edu	(715) 927-6690	
Mengizem	Tizale	on Co-op	tizale@wisc.edu	(240) 401-2909	
Aaron	Wagner	BWIG	wagner27@wisc.edu	(920) 279-9789	
Aaron	Wagner	BPAG	wagner27@wisc.edu	(920) 279-9789	
Aaron	Wagner	BSAC	wagner27@wisc.edu	(920) 279-9789	

Project description

Callie Mataczynski - Feb 25, 2020, 4:53 PM CST

Course Number:

BME 400

Project Name:

Tandem Bike for Person with Autism

Short Name:

Team Tandem

Project description/problem statement:

A family has requested that a tandem bike be constructed so that their adult autistic child can go for rides with an attendant. The bike should provide the autistic individual a physical workout while supplying them with a positive feedback system that encourages them to keep pedaling. The bike should also be fully operated by the attendant to the autistic individual with an electric motor to aid in their pedaling.

About the client:

The client, Noah, is male in his mid-twenties with autism. He is on the far end of the autism spectrum as he has high levels of anxiety, which can result in physical harm to himself or others when not controlled. The prescription drugs Noah takes makes it hard for him to lose weight, so this bike should be something that he can use to get in exercise. In order to adjust the bike to Noah's anxiety attacks, a harness will be added to the seat to keep him from falling off the bike while riding.

Budget and Reciepts

Callie Mataczynski - Mar 20, 2020, 6:19 PM CDT

Order Details

Ordered on March 20, 2020 | Order# 112-9983893-1593809

View or Print invoice

Shipping Address
Callie Mataczynski
6201 SILVERLACE TRL NE
ALBUQUERQUE, NM 87111-7135
United States
Change

Payment Method
VISA **** 9257
Change

Apply gift card balance
Enter code
Apply

Order Summary

Item(s) Subtotal:	$10.99
Shipping & Handling:	$0.00
Total before tax:	$10.99
Estimated tax to be collected:	$0.56
Grand Total:	**$11.55**

Transactions

Arriving Sat, Mar 28 by 8pm

Track package

(1) M10-1.25 Hex Coupling Nut, Steel Zinc DIN 6334
Sold by: Clipsandfasteners Inc
$10.99
Condition: New
Add gift option

Buy it again

Change Payment Method
Change shipping speed
Cancel items
Archive order

Fall 2019 PDF

Callie Mataczynski - Apr 22, 2020, 11:09 AM CDT

BME Design-Fall 2019 - Callie Mataczynski
Complete Notebook

PDF Version generated by

Callie Mataczynski

on

Apr 22, 2020 @09:21 AM CDT

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2020_04_22_notebook_51712.pdf(10.4 MB) - download

01_28: Team Meeting 1

Callie Mataczynski - Feb 25, 2020, 4:44 PM CST

Title: Team Meeting 2

Date: 01/28/20

Content by: Callie

Present: All

Goals:

-recap last semesrter

-figure out new team roles

Content:

-Aaron will be BSAC

Conclusions/action items:

Get together next week for regular meeting time or in 2 DAYS

01_30: Team meeting 2

Callie Mataczynski - Feb 18, 2020, 3:34 PM CST

Title: Team Meeting 2

Date: 01/30/20

Content by: Callie

Present: All

Goals:

-Discuss Resistance ideas

-Discuss Audio

Content:

-needs more research but we have schematic of Bluetooth sensors

Conclusions/action items:

-Continue to research

02_10: Team Meeting 3

Callie Mataczynski - Feb 18, 2020, 3:34 PM CST

Title: Team Meeting 3

Date: 02/10/20

Content by: Callie

Present: All

Goals:

-Discuss Resistance ideas AGAIN

-Order Parts

-Get detailed timeline

Content:

Detalied timline posted in google drive

Conclusions/action items:

While waiting for parts to come in, we are going to do more thinking on the resistance mechanism

02_18: Team Meeting 4

Callie Mataczynski - Feb 25, 2020, 4:43 PM CST

Title: Team Meeting 4

Date: 02/18/20

Content by: Callie

Present: All

Goals:

-Show circuit

-open resistance mechanism(cyclopes)

Content:

- didnt work too well to open cyclopes resistance

-found a way to remove magnets from big magnetic wheel

Conclusions/action items:

Next time we meet either get resistance mechanism working or buy another resistance mechanism on bike at walmart

02_25: Team meeting 5

Callie Mataczynski - Feb 25, 2020, 4:42 PM CST

Title: Team Meeting 2

Date: 01/30/20

Content by: Callie

Present: Aaron and callie

Goals:

-recap resistance mechanism

-Hook up bluetooth speaker to device

Content:

-Battery is attached to speaker

-see code

Conclusions/action items:

-Go to dream bikes tomorrow

-Glue magnets for resistance

-figure out stuff to do for back up resistance

02_27: Team meeting 6

Callie Mataczynski - Feb 27, 2020, 1:29 PM CST

Title: Team Meeting 6

Date: 02/27/20

Content by: Callie

Present: Team

Goals: Look at Aarons new circuit and Callie's magnetic resistance

Content:

- Aarons circuit looks awesome and it
- Callie's Resistance mech still needs more resistance
- We talked about assigning some roles for next week

Conclusions/action items:

Callie and Aaron going to Walmart tomorrow morning

Callie:

- Play around with new resistance mech. this weekend

Eric:

- Set up journal article

Aaron:

- Solder circuit

03_03: Team meeting 7

Callie Mataczynski - Mar 03, 2020, 4:53 PM CST

Title: Team Meeting 7

Date: 03/03/20

Content by: Callie

Present: Team

Goals:

-Update on Resistance Mech

-Update on Electronics

Content:

- Aar

Conclusions/action items:

Callie and Aaron going to Walmart tomorrow morning

Callie:

- Pld

Eric:

- Se

Aaron:

- Sol

04_01:Team Meeting 8

Callie Mataczynski - Apr 06, 2020, 9:37 AM CDT

Title: Team Meeting 8

Date: 04/01/20

Content by: Callie

Present: All and Meyerand

Goals:

-Update on how we are going forward with COVID

-

Content:

-Callie Has bike

-Aaron has bluetooth set up

-Eric will do a lot of documentation

Conclusions/action items:

-Start Welding

-Try 3D printing with Christa Wille

Spring 2020 Material and Expense Spreadsheet

Aaron Wagner - Apr 28, 2020, 1:45 PM CDT

Title: Spring 2020 Material and Expense Spreadsheet

Date: 4/28/2020

Content by: Aaron

Present: Aaron

Goals: Document material details and expenses for the Spring 2020 semester.

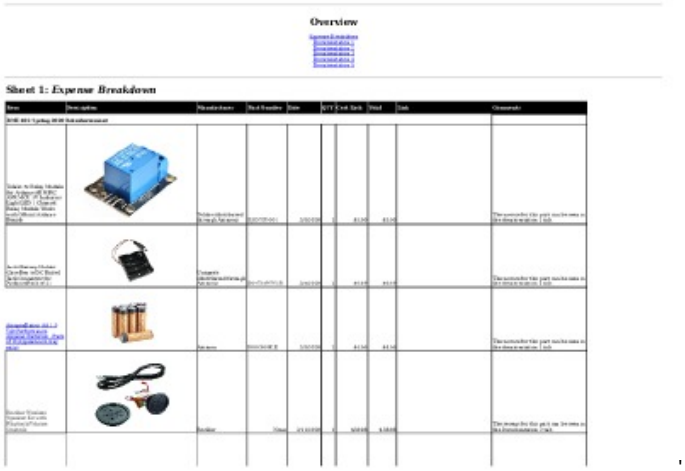
Content:

See the excel spreadsheet below for material descriptions and expense information.

Conclusions/action items:

The page is helpful in documenting all materials and expenses throughout the semester.

Aaron Wagner - Apr 28, 2020, 1:45 PM CDT



BPAG_Expense_Spreadsheet_Spring_2020.xlsx(1 MB) - download

Fall 2019 Material and Expense Spreadsheet

Aaron Wagner - Apr 28, 2020, 1:42 PM CDT

Title: Material and Expense Spreadsheet Fall 2019

Date: 12/3/19

Content by: Aaron

Present: Aaron

Goals: Document material details and expenses for the Fall 2019 semester

Content:

See the excel spreadsheet below for material descriptions and expense information.

Conclusions/action items:

The page is helpful in documenting all materials and expenses throughout the semester.

Aaron Wagner - Dec 03, 2019, 8:15 PM CST

'

BPAG_Expense_Spreadsheet.xlsx(84.7 KB) - download

Testing Wattage Outputs

ERIC ARNDT - Dec

Title: Testing Wattage Outputs

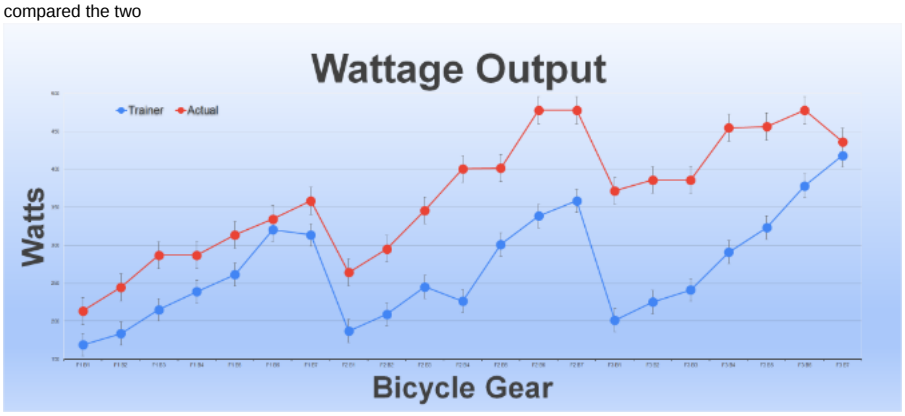
Date: 11/21/2019

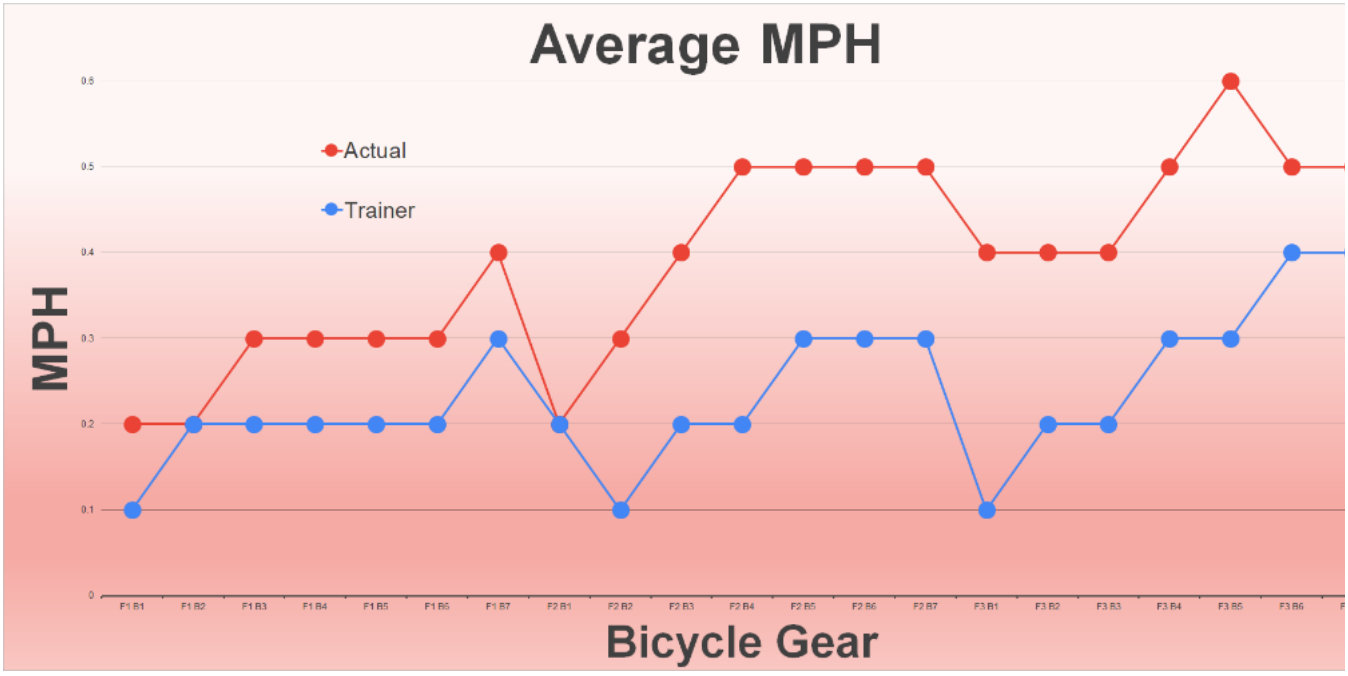
Content by: Eric Arndt

Present: Everyone

Goals: To test the wattage outputs of riding a bike normally vs riding a bike on a magnetic resistance training mechanism

Content:

- protocol
  - had a person bike approximately 70 yards at a constant pedaling speed for each gear combination (21 total)
    - measure time, average speed, maximum speed, wattage output
    - analyzed data
  - had same person then pedal on the magnetic resistance training mechanism for the time taken to go 70 yards on a given gear ratio
  - compared the two
  - 

  - 

Conclusions/action items:

The resistance trainer and the actual bike showed similar trends in terms of wattage output as a function of the gear ratio. It appears that the trainer is sufficient to use for potential resistance n able to implement the wattage output into some type of user interface system.

Magnetic Reed Switch

Callie Mataczynski - Feb 15, 2020, 2:27 PM CST

Title: Magnetic Reed switch sensor

Date: 02/15/20

Content by: Callie

Goals: Get Ideas of Magnetic Reed swtich

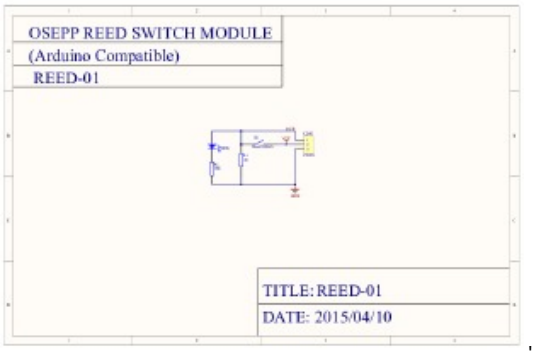
Content:

-Look at schematic attached

Conclusions/action items:

Use this switch in conjuction with bluetooth speaker

Callie Mataczynski - Feb 15, 2020, 2:27 PM CST



reed-switch-sensor.pdf(36.7 KB) - download

Belt Drives

Callie Mataczynski - Feb 16, 2020, 1:44 PM CST

Title: Belt Drives

Date: 02/16/20

Content by: Callie

Goals: Get Ideas of how much resistance belt drives give

Content:

- Works by a small gear ration pulling a heavy wheel... https://video.search.yahoo.com/search/video?fr=tightropetb&p=exercise+bike+belt+drives+how+it+works#id=5&vid=bb199094dc468707374d6f7de881af2a&action=click

Conclusions/action items:

U

Callie Mataczynski - Feb 16, 2020, 1:48 PM CST

Magnetic Resistance

Callie Mataczynski - Apr 06, 2020, 9:30 AM CDT

Title: Magnetic Resistance

Date: 01/30/20

Content by: Callie

Present: All

Goals:

-get more desings on resistance mechanism

Content:

-Try magnets again

Conclusions/action items:

- Try this and see if it works, also try a bigger gear ratio

-Big cog in the front, little in the back...

Callie Mataczynski - Feb 16, 2020, 2:12 PM CST

Magnetic_resistsnce_idea.jpg(153.9 KB) - download

Changing the gear ratio

Callie Mataczynski - Apr 06, 2020, 9:34 AM CDT

Title: Magnetic Resistance

Date: 01/30/20

Content by: Callie

Present: All

Goals:

-get more desings on gear ratios

Content:

-Try gear ratios pictured below to increase resistance

Conclusions/action items:

-Big cog in the front, little in the back

-Still may not give enough resistance

Callie Mataczynski - Feb 19, 2020, 4:37 PM CST

Bigger_gears.jpg(195.2 KB) - download

Callie Mataczynski - Feb 19, 2020, 4:37 PM CST

Idea_for_weld_gear_ratio.jpg(187.2 KB) - download

External Attachments

Callie Mataczynski - Apr 06, 2020, 9:32 AM CDT

Title: External Attachments

Date: 04/06/20

Content by: Callie

Present: Callie

Goals:

--Brain storm of external attachemts

Content:

-

Conclusions/action items:

- Will protect Noah from Wheels

-Possibly rain

Trike attachment

Callie Mataczynski - Apr 22, 2020, 9:18 AM CDT

Title: Magnetic Resistance

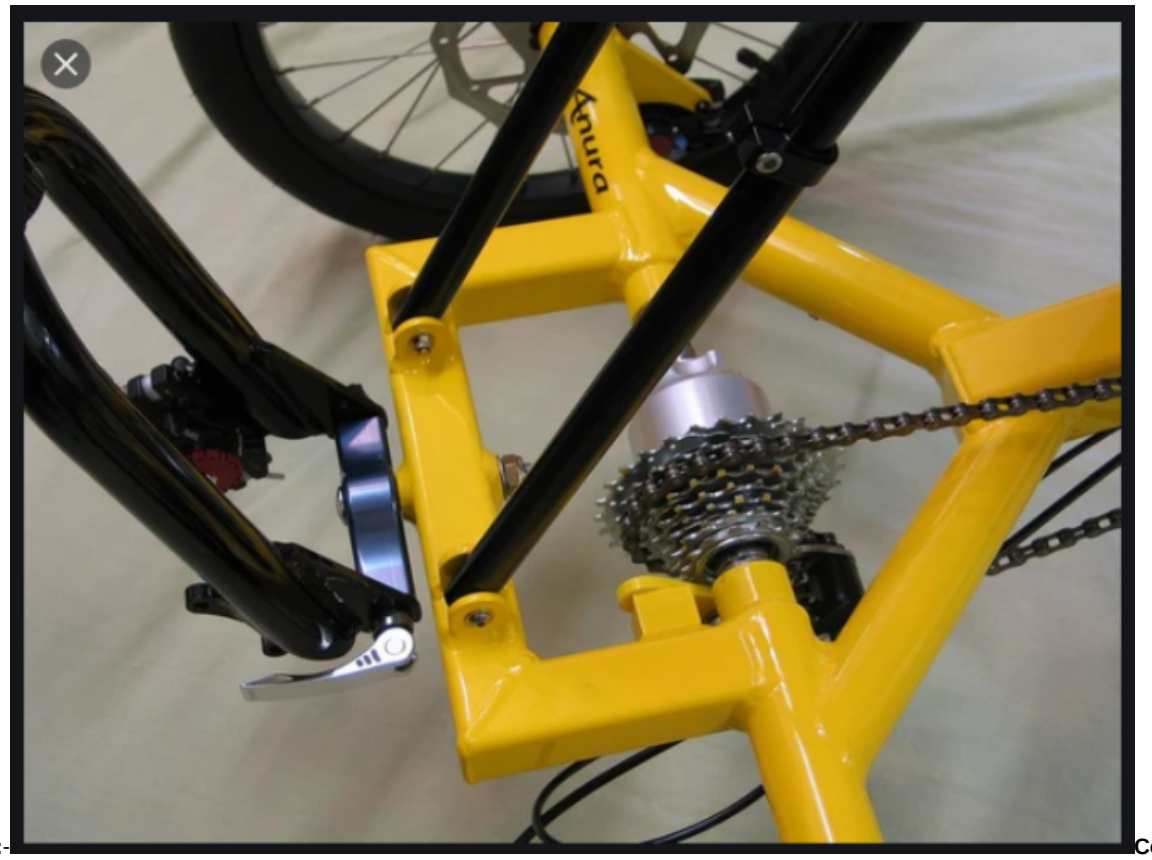
Date: 04/06/20

Content by: Callie

Present: All

Goals:

-Example of a trike attachment



Content:-

Conclusions/action items:

-

Initial Autism Research

Aaron Wagner - Sep 11, 2019, 9:30 PM CDT

Title: Initial Autism Research

Date: 9/11/19

Content by: Aaron Wagner

Present: Aaron Wagner

Goals: Learn the basics of Autism

Content:

Common social behaviors of individuals with autism:

- Little eye contact with others.
- Slow to react to someone calling their name.
- Difficulty with the back and forth conversation.
- Facial and hand gestures that do not match with what is being said.
- Have a hard time understanding someone else's point of view.

Note: Knowing the typical behaviors will be helpful for the team when conversing with the individual with autism.

Common repetitive behaviors of individual with autism:

- Continuously repeating the same word throughout a conversation.
- Overly focused interest in moving objects or parts of objects.
- Upset by slight changes in routine.

Note: Knowing the typical behaviors will be helpful for the team when conversing with the individual with autism.

Causes and Risk Factors of Autism:

- Having older parents
- low birth weight

Treatments and Therapies of Autism:

- reduce challenging behaviors
- build upon strengths
- learn communication skills

https://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-asd/index.shtml

Conclusions/action items:

This research will be very helpful in keeping the team aware of the typical behaviors individuals with autism have. Knowing the general traits of autism will also help the team keep in mind that the tandem bike cannot be to complicated to operate for the individual with autism or it could make the experience not as enjoyable. From here the team will keep researching more about autism, and competing designs to the project at hand.

Tricycle with Tandem Attachment Design

Aaron Wagner - Sep 18, 2019, 8:37 PM CDT

Title: Tricycle with Tandem Attachment Design

Date: 9/18/19

Content by: Aaron

Present: Aaron

Goals: Learn more about existing tricycles with tandem attachments.

Content:

https://madtriker.com/tandem-adult-tricycles/

Figure 1: Tricycle with tandem attachment

The photo in Figure 1 above shows a tricycle with a tandem attachment. This design is very interesting as it exemplifies the kind of stability our project needs to have. The tricycle itself obviously has three wheels which is very stable. On top of that, the tandem portion has another two wheels side by side, which increase the stability even more. This design is perfect for this project as the autistic individual may have balance issues, which this design counteracts. This design could be improved to better fit our project by making the front tricycle electric powered. Additionally the gear and chain would need to be removed on the tandem portion for safety of the autistic individual. Finally, the tandem seat would need to be modified for the autistic individuals safety harness.

Conclusions/action items:

This design is a great inspiration for what the tandem portion of the design needs to look like. As described earlier, the side by side set of wheels on the tandem portion greatly increases the stability, which is really important to keep the riders safe. As described above there are some improvements that could be done to better suit our project needs. From here, the team needs to continue doing research to get a better idea of what the design should look like. Also the team needs to work on the PDS due this upcoming Friday.

Top Electric Powered Tricycles in Market

Aaron Wagner - Sep 18, 2019, 8:17 PM CDT

Title: Top Electric Powered Tricycles in Market

Date: 9/18/19

Content by: Aaron

Present: Aaron

Goals: Learn more about electric powered tricycles currently in market.

Content:

https://www.ridetwowheels.com/electric-trikes-adult/







Name	Pedego Electric Tricycle	eWheels EW-29	Addmotor Motan Fat Tire	RMB EV Libert-e	Shopper Adult Trike	PFIFF Grazia-Bosch	Recumbent Electric Tricycle
Power	250W	500w	750W	350W	500W	400W	750W
Size	20"	26"	24"X4.0" Fat Tire	20"	24"	26"	20"x 4" Front; 26"x 4" Rear
Speed	11-13mph	15mph	23mph	11mph	11mph	15.5 mph	20mph
Range	25 miles	20 miles	40-55miles	15 miles	25 miles	27-37 miles	25-50 miles
Battery	36V, 11Ah Li-Ion	12V SLA battery	48V, 12.8AH Lithium Battery	36V 10Ah Lithium	36V Battery	36v 11Ah Lithium Ion	48v 15.6ah Li-ion
Rating	5/5	3.5/5	5/5	4/5	4/5	5/5	4.5/5

Figure 1: Design Matrix of some of the top electric powered tricycles currently in market.

This website shows a variety of electric powered tricycles in market and some of their attributes. This website also includes descriptions of all the tricycles on the website below the table seen in Figure 1. Additionally, this website also has the price of each tricycle. Referencing this website will be very helpful in determining what a bike looks like that best fits the needs of the project.

Initial comments from the table shown in Figure 1:

- These electric bikes have a much better range on the batteries than I initially I thought.
    - It should be noted that these ranges will be much lower when a tandem bike is added to the back.
    - The bikes range from $1-3k in price.
    - Some of the bikes go pretty fast, upwards of 20 mph.
        - The bike shouldn't be very fast as that can reduce the safety for the users. Keeping this in mind should help lower the price of what is needed.
        - Torque is what is more critical for this project, as the bike would need to pull a tandem with a 220lb rider.
    - Conversations should be had with the client to see if a certain wheel size or height of the bike is desired for the attendant.

Conclusions/action items:

This website was very helpful in getting initial thoughts on what kind of electric bike currently exist in the market. This website should be further utilized in the future when thinking about what possible designs for this project should look like. From here, the team needs to continue doing research on what electric trikes are currently on the market and begin to come up with initial designs for a design matrix.

Buddy Bike

Aaron Wagner - Sep 11, 2019, 6:30 PM CDT

Title: Buddy Bike

Date: 9/11/2019

Content by: Aaron Wagner

Present: Aaron Wagner

Goals: Learn more about competing tandem bike designs that are intended for special needs.

Content:

Figure 1: Picture of the Buddy Bike product

http://buddybike.com/WhatIsTheBuddyBike.html

The Buddy Bike is a new take on the tandem bike with an emphasis on people with special needs. Most tandem bikes have the person sitting in the front as the one steering and the person in the back with a stationary handle bar. The Buddy Bike looks to switch these roles with the person in the back as the one to steer. This allows the special need individual to sit in the front and be easily watched by the person along, but yet gives the person in the back full control of the bike. The Buddy Bike has a patent on the steering wheel that allows the back rider to do the steering. The Buddy bike also attempts to help users by having the front seat lower than usual bikes. This makes the ride more enjoyable for both passengers as they both have a good view of what's ahead. Additionally, the Buddy Bike is shorter in total length than most tandem bikes, which gives the individual accompanying the special need individual more control.

Conclusions/action items:

This research was really helpful in teaching the team a little more about what exisiting designs already exist for special need tandem bike designs. Although the modified handle bar on the Buddy Bike is already patented, this gives the team a good starting point on design on their own design.

The next step from here is to continue looking into competing designs and learn more about autism, the disability the patient we are working with has.

Band Clamp (rubber)

Aaron Wagner - Jan 29, 2020, 6:10 PM CST

Title: Band Clamp (rubber)

Date: 1/29/20

Content by: Aaron

Present: Aaron

Goals: Find away to add more resistance to the current resistance mechanism.

Content:

The image above is of a band clamp with rubber padding. This item could be used by wrapping it around the roller bar of the current resistance mechanism being used. This would add more resistance through the friction created between the roller bar and the rubber padding. These clamps are relatively inexpensive, so a few of these could be purchased to experiment with on the bike.

Conclusions/action items:

Overall, the band clamp with rubber padding is a preliminary idea on how to add more resistance to the current resistance mechanism. From here, the team needs to continue finding other ways to add resistance to the current resistance mechanism.

Audio feedback helpful web sites

Aaron Wagner - Jan 29, 2020, 8:10 PM CST

Title: Audio feedback helpful web sites

Date: 1/29/20

Content by: Aaron

Present: Aaron

Goals: Begin to figure out how to implement the audio feedback system to the bike by surfing the web.

Content:

wireless bluetooth speaker wire diagrams:

https://www.parts-express.com/portable-60-watt-battery-powered-bluetooth-speaker-package-with-3-full-range-drivers--300-7302

https://medium.com/@kthornbloom/how-to-build-a-bluetooth-speaker-b145dd7475af

Possible switches to use for turning the speakers on and off:

https://www.switchelectronics.co.uk/blog/SwitchGuide/ (microswitch has promise)

Conclusions/action items:

Wireless Bluetooth Speaker Kits

Aaron Wagner - Apr 28, 2020, 2:11

Title: Wireless Bluetooth Speaker Kits

Date: 2/6/2020

Content by: Aaron

Present: Aaron

Goals: Determine what the prices of wireless bluetooth speaker kits on the market are.

Content:

- Rockler Wireless Speaker Kit
  - Price: $29.99
  - Includes single speaker and charging cord
  - link: https://www.rockler.com/rockler-wireless-speaker-kit-with-playback-volume-controls?sid=V91040&promo=shopping&utm_source=google&utm_medium=cpc&utm_term=&utm_content=pla_with_promotion&utm_campaign=PL&gclid=EAIaIQobChMI6eLbgI--5wIVgsDACh2dCAbLEAQYASABEgKutfD_BwE
- Parts express wireless speaker kit
  - Price: $64.90
  - Includes 2 speakers, disposable battery powered.
  - link: https://www.parts-express.com/portable-30-watt-battery-powered-bluetooth-speaker-package-with-2-1-2-full-range-drivers--300-7300?gclid=EAIaIQobChMI6eLbgI--5wIVgsDACh2dCAbLEAQYDiABEgLalfD_BwE
- Kiwi co light up speaker
  - Price: $39.95
  - Includes 1 speaker. speaker housing. Powered by disposable batteries. Connects to phone with aux cord.
  - link: https://www.kiwico.com/light-up-speaker-project-kit.html?utm_source=Google-u&utm_medium=SEM&utm_content=62549269635&utm_campaign=1625621654&utm_term=&utm_ad=&utm_adset=&utm_placement=&gclid=EAIaIQobChMI6eLbgI--5wIVgsDACh2dCAbLEAQYBCABEgKfzPD_BwE
- Robot shop bluetooth speaker
  - Price: $55
  - Includes 2 speakers, speaker housing, charging cord.
  - Link: https://www.robotshop.com/en/bluetooth-speaker-kit.html?gclid=EAIaIQobChMI6eLbgI--5wIVgsDACh2dCAbLEAQYCSABEgJad_D_BwE

Conclusions/action items:

This research was helpful in seeing what wireless speaker kits are available on the market. From here, the team needs to discuss which of these speaker kits best fits the project, then purchas begin modifying.

2/10/20 Update: The team decided to use the Rockler Wireless Speaker Kit in the design because of its low cost and ease of modification.

Audio Feedback System Set Up

Aaron Wagner - Apr 09, 2020, 5:33 PM CDT

Title: Audio Feedback System Set Up

Date: 4/9/2020

Content by: Aaron

Present: Aaron

Goals: Document how to set up the audio feedback system for future reference

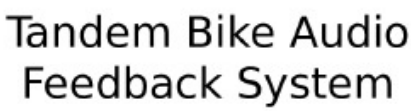
Content:

See the attached slides for how to set up the audio feedback system.

Conclusions/action items:

This deck of slides was made as a reference in how to set up the audio feedback system. The team ran into problems with the COVID-19 pandemic and no longer has access to tools that are necessary to assemble the feedback system. It is important to document what needs to be done in the case a new team of students needs to finish up this task.

Callie Mataczynski - Apr 23, 2020, 1:34 PM CDT



Tandem_Bike_Audio_Feedback_Set_Up_Instructions.pptx(472.3 KB) - download

Audio Feedback System Code

Aaron Wagner - Apr 09, 2020, 5:36 PM CDT

Title: Audio Feedback System Code

Date: 4/9/2020

Content by: Aaron

Present: Aaron

Goals: Document the Arduino code for the audio feedback system.

Content:

```
int ledpin = 12;
int counter = 0;
int onpin = 10;
int timer = 0;

void setup() {
  // put your setup code here, to run once:
  //set outputs
  pinMode(ledpin, OUTPUT);
  pinMode(onpin, OUTPUT);

  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
if (digitalRead(ledpin)==1){
  digitalWrite(onpin, HIGH);
  timer = 1500;
}
else if (timer == 0){
  digitalWrite(onpin, LOW);
}
else{
 timer -= 1;
}
delay(10);
Serial.println(timer);
}
```

Conclusions/action items:

The above code is for the audio feedback system on the tandem bike. It is important to document this code for later reference.

Biosafety Training

Aaron Wagner - Sep 11, 2019, 9:33 PM CDT

Title: Biosafety Training Documentation

Date: 9/11/19

Content by: Aaron

Present: Aaron

Goals: Show that I have completed the biosaftey training and am knowledgeable of the risks when working with biological tissue.

Content:

University of Wisconsin-Madison

This certifies that AARON WAGNER has completed training for the following course(s):

Curriculum	Group Name	Completion Date	Expiration Date
Biosafety Required Training Quiz	Biosafety Required Training	1/29/2018	
Bloodborne Pathogens Safety in Research	Biosafety 102: Bloodborne Pathogens for Laboratory and Research	1/29/2018	
RCR Certification	Responsible Conduct of Research (a)	1/29/2018	
Toxic Substances Quiz	Chemical Safety : Toxic Substances	1/29/2018	

Data Effective: Fri Mar 9 9:03:23 2018
Report Generated: Sun Mar 11 10:29:09 2018

Conclusions/action items:

This lab archives document shows that I have competed the biosafety online training course.

Green Pass

Aaron Wagner - Sep 11, 2019, 9:33 PM CDT

Title: Green Pass Documentation

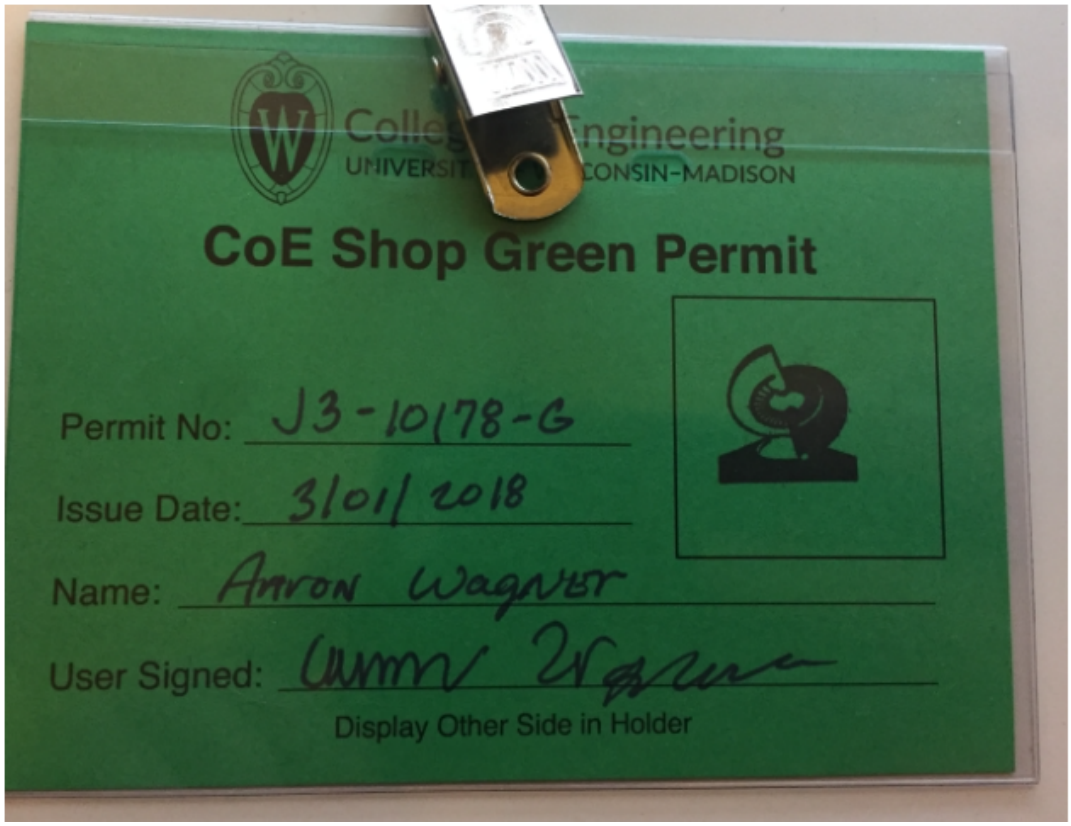
Date: 9/11/19

Content by: Aaron

Present: Aaron

Goals: Obtain a green pass to be able to work with the lathe and mill in the TEAM Lab

Content:



Conclusions/action items:

The lab archives entry shows that I have completed the green pass training.

Autism

ERIC ARNDT - Oct 08, 2019, 9:08 PM CDT

Title: Autism

Date: 9/14/2019

Content by: Eric Arndt

Present: Eric Arndt

Goals: To understand more about autism

Content:

- Autism spectrum disorder (ASD)
- https://www.autismspeaks.org/what-autism
- symptoms
    - challenges with social skills
    - repetitive behaviors
    - speech difficulty
    - difficulty interpreting nonverbal communication
    - reduced motor skills
        - reduced coordination
        - reaction time
- indicators of autism
    - usually appear by the age of 2-3

Conclusions/action items:

Try to learn more about clients spectrum of autism.

Autism effecting balance

ERIC ARNDT - Oct 08, 2019, 9:12 PM CDT

Title: Autism effecting balance

Date: 9/16/2019

Content by: Eric Arndt

Present: Eric Arndt

Goals: To read article about how autism effects balance in individuals.

Content:

- https://www.ncbi.nlm.nih.gov/m/pubmed/29693781/
- meta-analysis to examine physical activity interventions on kids with ASD
- Was concluded that physical activity can be used as an evidence based strategy to diagnose ASD

Conclusions/action items:

Wattage Output of Cyclists

ERIC ARNDT - Dec 09, 2019, 7:09 PM CST

Title: Wattage Output of Cyclists

Date: 11/10/2019

Content by: Eric Arndt

Present: Eric Arndt

Goals: To get an understanding of how much wattage is outputted by a cyclist

Content:

- Median wattage output for males is 260W
- median wattage output for females is 200W
- cyclinganalytics.com

Conclusions/action items:

apply this to testing

User Interface Design Idea

ERIC ARNDT - Apr 29, 2020, 3:00 PM CDT

Title:

User Interface Design Idea

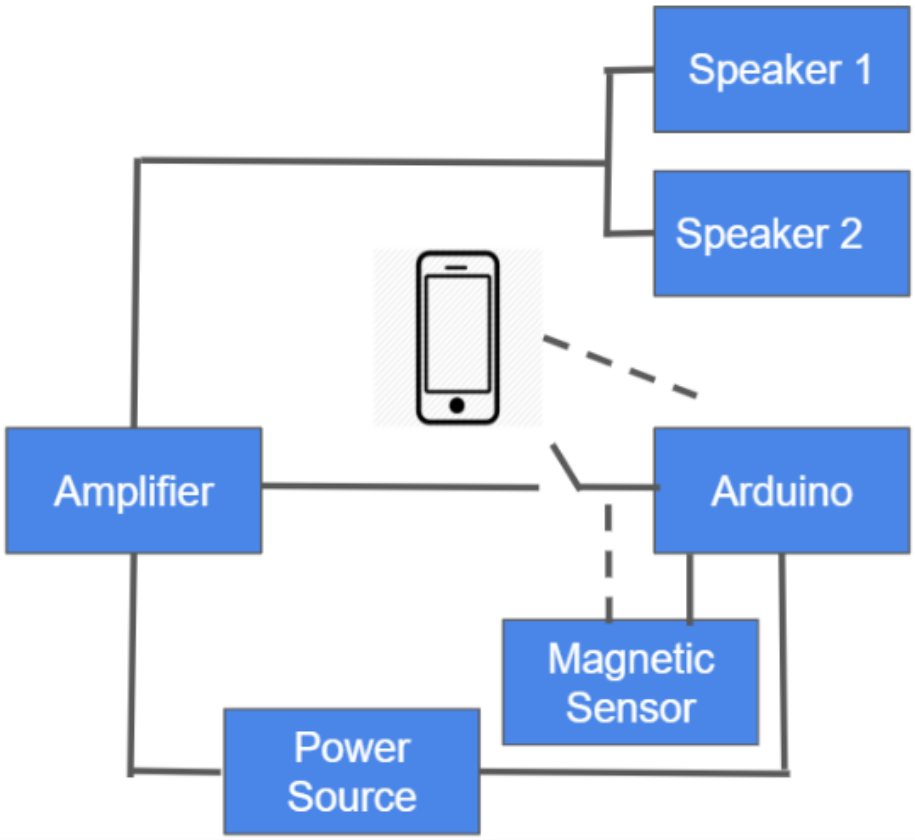
Date: 2/11/2020

Content by: Eric Arndt

Present: Eric Arndt

Goals: Develop an idea for the user interface design

Content:



This system would use an arduino that would receive signals from a magnetic sensor that detects pedaling. This is similar to how a bicycle computer works. When the arduino receives a signal that there is pedaling, it will close the circuit to the speaker so that music can be played. When pedaling stops, it will open the circuit so that the music is not played through the speakers.

Conclusions/action items:

We need to buy materials for this user interface and design it to make sure it works.

2014/11/03-Entry guidelines

John Puccinelli - Sep 05, 2016, 1:18 PM CDT

Use this as a guide for every entry

- Every text entry of your notebook should have the **bold titles** below.
- Every page/entry should be **named starting with the date** of the entry's first creation/activity, subsequent material from future dates can be added later.

You can create a copy of the blank template by first opening the desired folder, clicking on "New", selecting "Copy Existing Page...", and then select "2014/11/03-Template")

Title: Descriptive title (i.e. Client Meeting)

Date: 9/5/2016

Content by: The one person who wrote the content

Present: Names of those present if more than just you (not necessary for individual work)

Goals: Establish clear goals for all text entries (meetings, individual work, etc.).

Content:

Contains clear and organized notes (also includes any references used)

Conclusions/action items:

Recap only the most significant findings and/or action items resulting from the entry.

2014/11/03-Template

John Puccinelli - Nov 03, 2014, 3:20 PM CST

Title:

Date:

Content by:

Present:

Goals:

Content:

Conclusions/action items: