FINAL PRODUCT BREAKDOWN

TEAM: HPVCP

Due Date: 12/3/2021

Completed System:

Figure 1: Mounted Flywheel

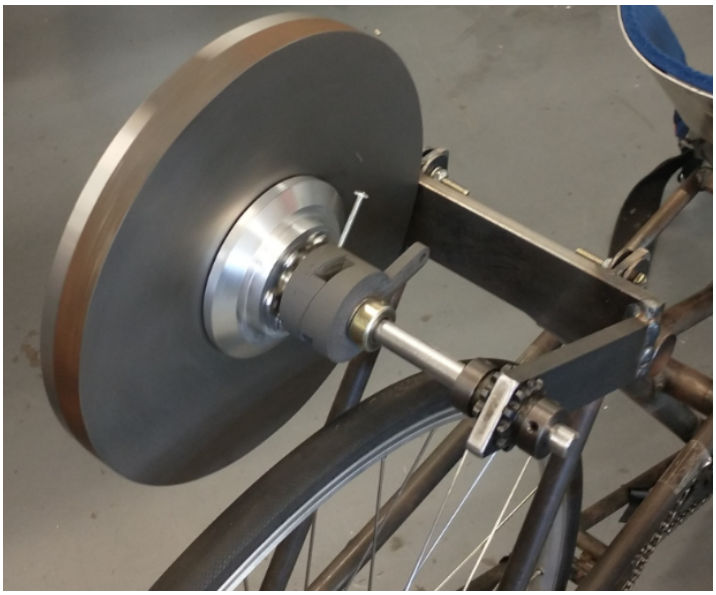


Figure 2: Clutch System

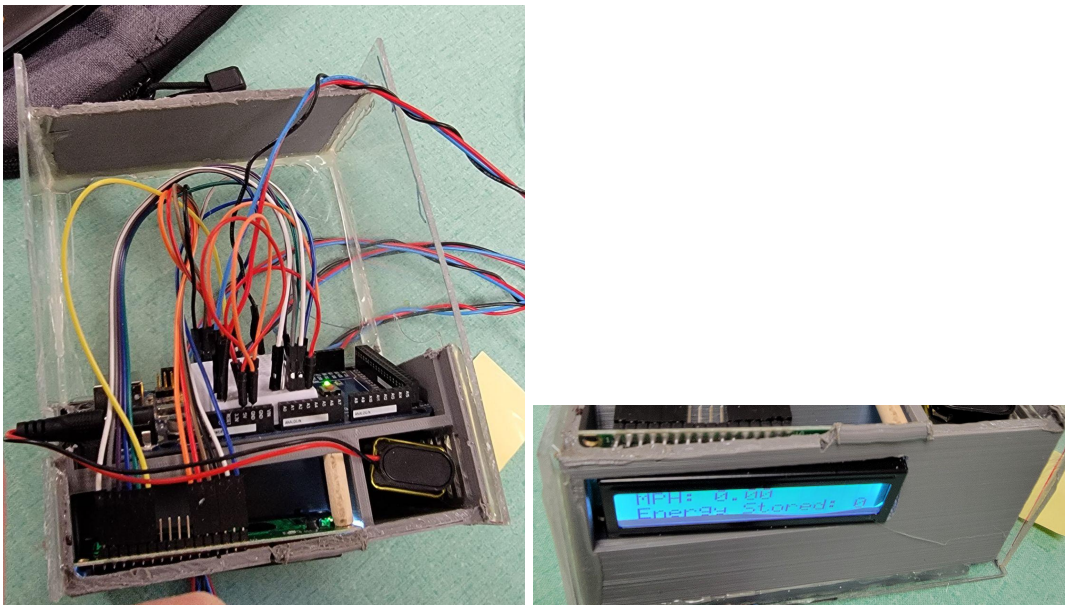
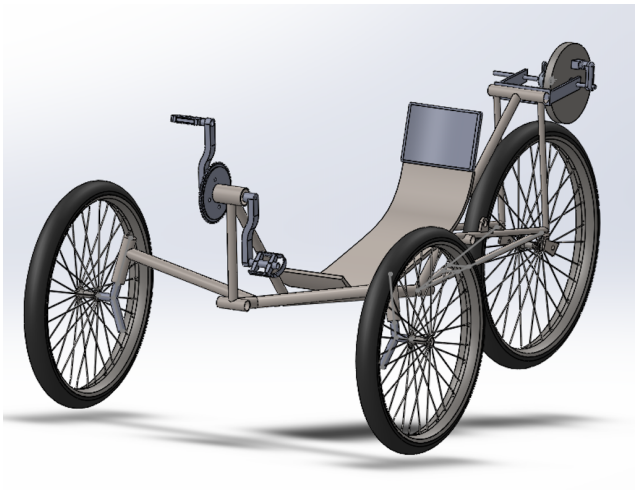
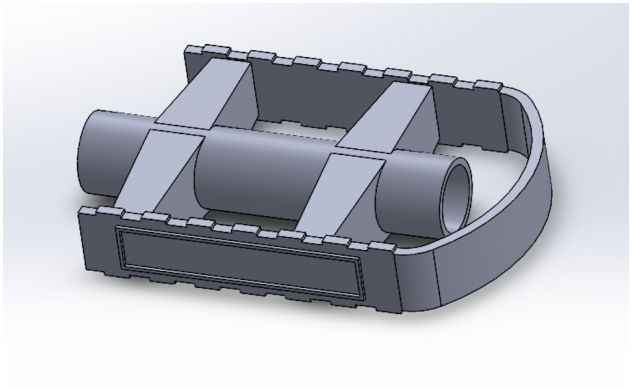
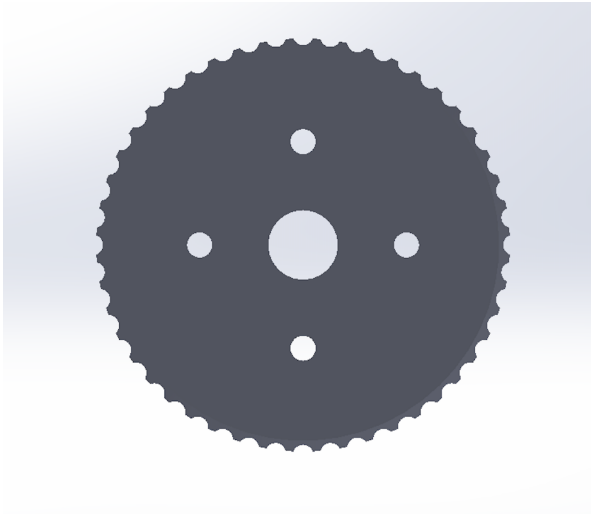


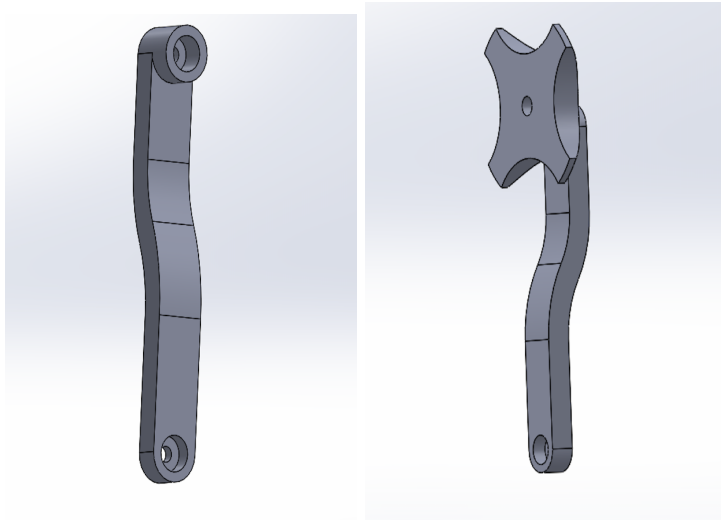
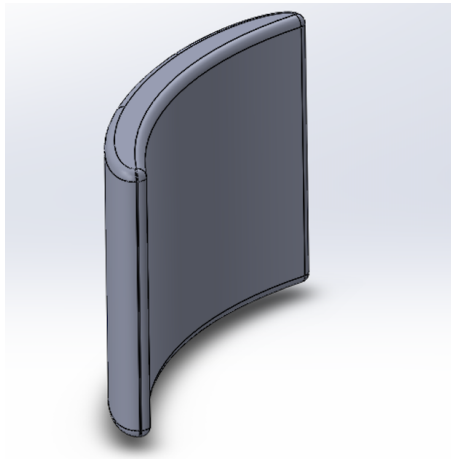
Figure 3: Electrical System/Display Screen

The following are the Action Items each person completed between Hardware Review 2 and the completion of the final product:

Team Member: Abdulh Alsabaie

Action Item	Date Completed	Result/Proof of Completion
Compilation of CAD drawn by other team members	12/03/2021	

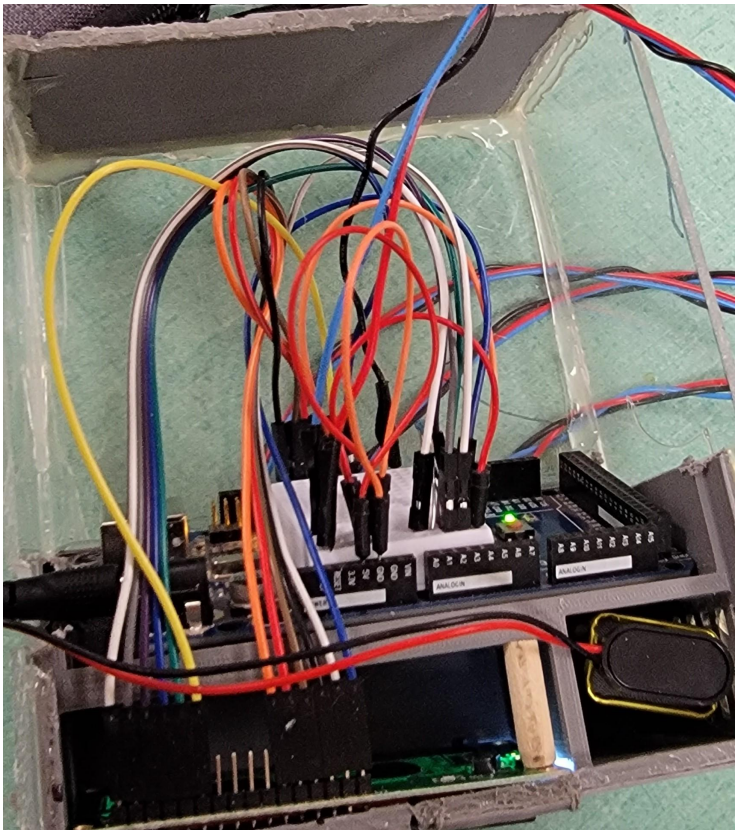
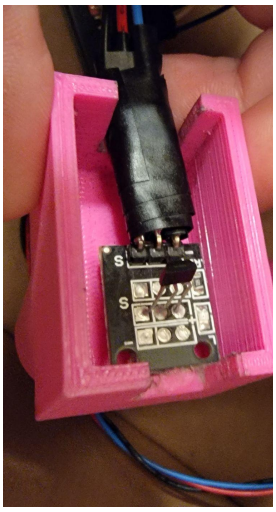
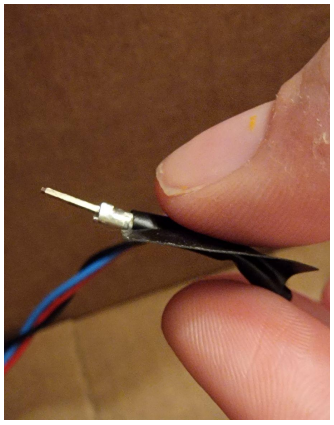
Drawing the wheel CAD	11/27/2021	
Drawing the peddle CAD	12/03/2021	
Drawing the sprocket for the pedal	12/03/2021	

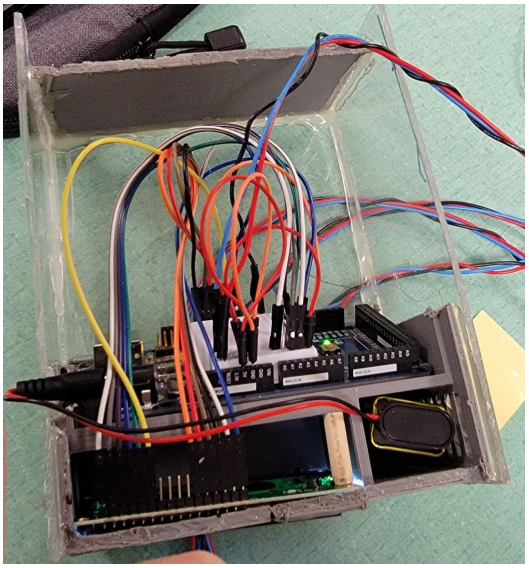
Drawing the peddle CAD	12/03/2021	
Drawing the seat head CAD	12/03/2021	

Team Member: Yen Clutter

Action Item	Date Completed	Result/Proof of Completion
Create speedometer functionality & completed EGR #3 "Top Speed"	11/04/2021	RPM = 120 MPH = 9.28 RPM = 240 MPH = 18.56 Slow Down RPM = 360 MPH = 27.85 Slow Down RPM = 240 MPH = 18.56 Slow Down RPM = 180 MPH = 13.92 RPM = 300 MPH = 23.20

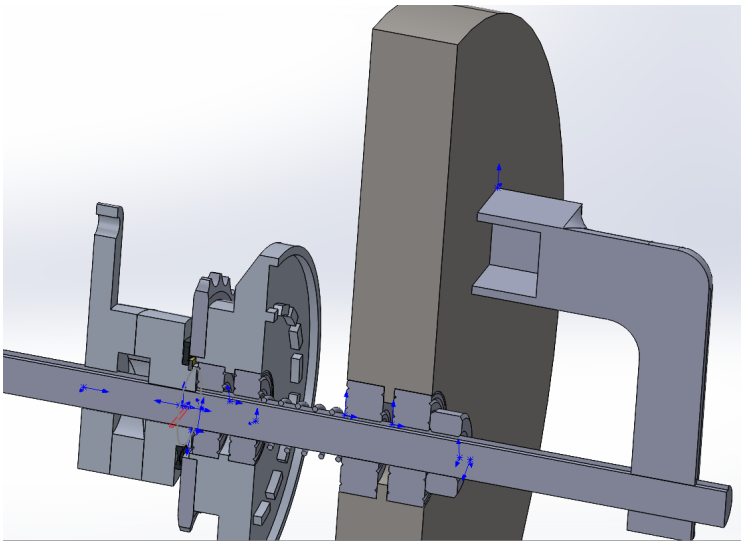
Create Flywheel Energy Calculation Functionality	11/19/2021	`float getFlyEnergy(float rps)`
		`{`
		`  float k = 0.5; //inertial constant`
		`  float M = 20.54; //mass`
		`  float R = 0.3302; //flywheel radius`
		`  float I = k * M * (pow(R, 2)); //inertia`
		`  float E = (.5) * I * (pow(rps, 2)); //energy equation`
		`  return E;`
		`}`

Finish Arduino Configuration	11/14/2021	
Output Display Metrics to Screen	11/30/2021	
Solder Hall Effect Sensors You can see the solder joint on the right. All leads were wrapped to insulate them and prevent short circuiting.	12/02/2021	 

Re-do housing to fit all of our finished electronics	12/2/2021	

Team Member: Daniel Quezada

Action Item	Date Completed	Result/Proof of Completion
built mount for the propulsion system, then rebuilt according to the new restriction	11/28-12/3	the propulsion system is now on vehicle 

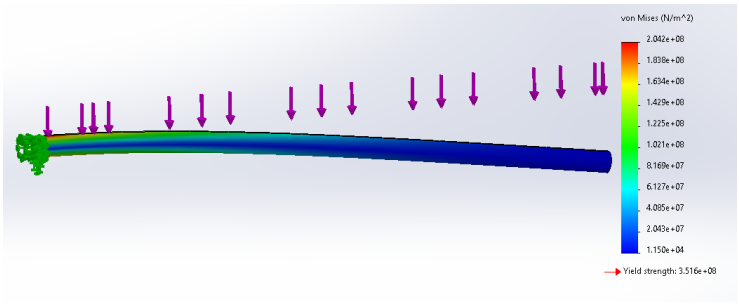
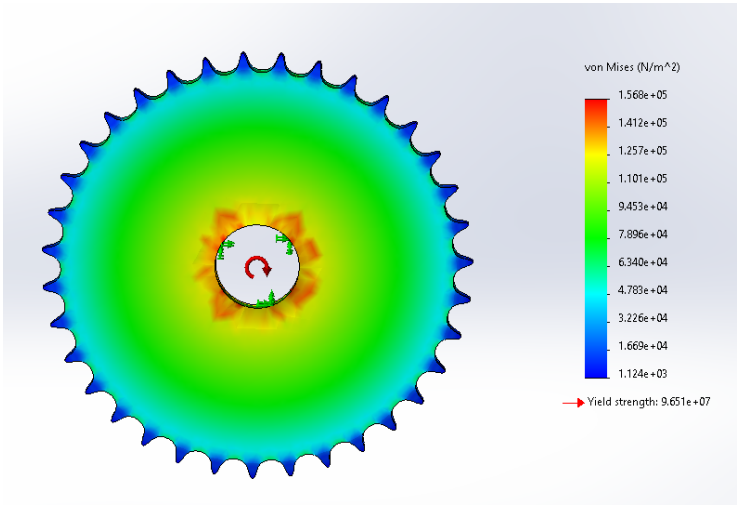
total conceptualization, design, and analysis of mechanical systems (accomplished by Connor and myself)	semester start-ongoing	
delegate tasks to team members	entire semester	tasks were generated by Connor and myself according to design and workload. These tasks were given to team members according to capability and availability.
built the CAD for the entire propulsion system, updated with most recent iterations as the design needed according to an analysis by Connor and myself	midpoint presentation-now.	CAD, as seen above, based off of analysis from hand calculations and design tools built by Connor and myself
completed manufacturing of the entire system. (Shop managers machined the flywheel, friction plate fixture, and sprockets for us.)	11/04-12/3	The subsystem is currently installed on the bike
write report content, and presentations, and rewrite and edit the work of other members.	summer to now	

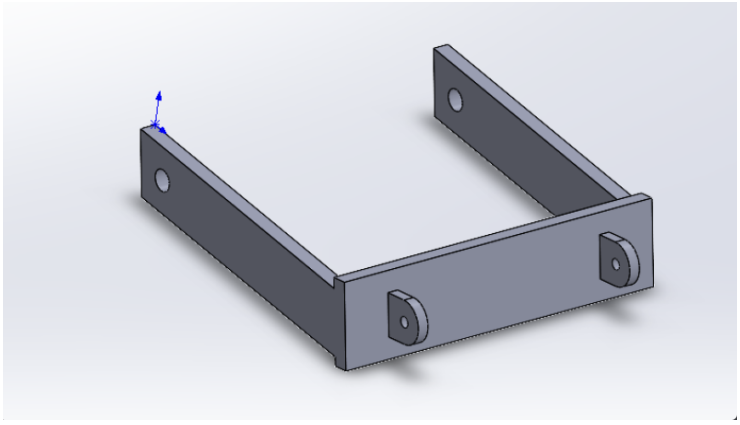
Team Member: Connor Tolman

Action Item	Date Completed	Result/Proof of Completion
total conceptualization, design, and bulk analysis of system and components (along with Daniel)	Ongoing	Worked mainly on helping remote team members and non-ME team members understand the design and what is going on with the assembly. Analyzed system via FEA and design tools which have been continuously updated for changes in the design. Ran calculations for new components that were added to the design last minute to ensure functionality and safety

generated tasks for satellite team members	Ongoing	Ensured that team members who were sick or out of country knew what was going on with the project, and helped to delegate tasks to them so that they could contribute to the final product as much as possible
design presentations and content for project submissions	11/29/21	Final Presentation, Poster, Final Product Presentation to Dr. Willy
oversaw documents submission and quality.	Ongoing	As document manager, ensured that documents met all stated requirements. Checked grammar and formatting to ensure that all students' writing was understandable.
Assisted Daniel with small parts of manufacturing and assembly	12/3/21	Assisted with manufacturing and assembly where possible without being shop trained. Final product presentation to Dr. Willy

Team Member: Yujie Zhang

Action Item	Date Completed	Result/Proof of Completion
Shaft and Sprockets FEA Testing	11/29/2021	 

Final CAD and Mount	12/1	
Final Report Edit	12/3	Worked on the final report, sorted out, and revised some formatting.