MECH 328 Weekly Progress Report *Dates: September 23-29*

Group: 10 Project Title: TrailRider 5.0

Last Week's Goals:

1. Score full concepts and complete DFMEA
2. Complete the 'Investigation' appendix

Last Week's Activities:

Name	Activities	Hours Worked	
		Last Week	Total
Andrea	● Generated and discussed full concepts with team ● Complete Investigation Appendix ● Completed weekly report	8	25
Carson	● Discussed full concepts with the team ● Researched existing patents related to lever-drive wheelchairs ● Created a new requirements document ● Developed evaluation criteria for WDM	8	25
Julia	● Discussed full concepts with team ● Researched existing patents for lever propulsion ● Re-drew and solidified full concepts in greater detail to prepare for WDM next week	8	25
Lukas	● Discussed full concepts with team ● Re-drew and solidified full concepts in greater detail to prepare for WDM next week ● Developed evaluation criteria for WDM	8	25
Ratthamnoon	● Discussed full concepts with team ● Worked on and finished evaluation criteria	8	25
Stephen	● Researched rider guild to prove there is a market for a version of the TrailRider with more rider independence. ● Discussed full concepts with team.	8	25

Summary of progress:

- A new round of full concept generation was done, as per Professor Hodgson's recommendation

- Four full concepts, of broad variety, were completed and are to be evaluated in the WDM
- Further research and decisions were made for setting up the ranking system of our WDM
- Further research was done to support our scope and the ranking of our needs
- Investigation Appendix was completed
- An updated requirements document was made in accordance to Professor Mckesson's lecture

Assessment of Overall Progress:

- Progress is about a week behind Gantt chart schedule due to problems that arose in full concept generation and in developing a rating system for the WDM
- Optimization and DFMEA were also unable to be completed
- Scoring WDM has been pushed for next week, which is expected to take one day
- Optimization will commence after the WDM, which is expected to take the rest of the week
- DFMEA can take one day, as opposed to three days stated in the Gantt chart for lag time
- If the above assessment is correct, the team can be back on track and be ready for the Concept Selection Review

Goals for Next Week:

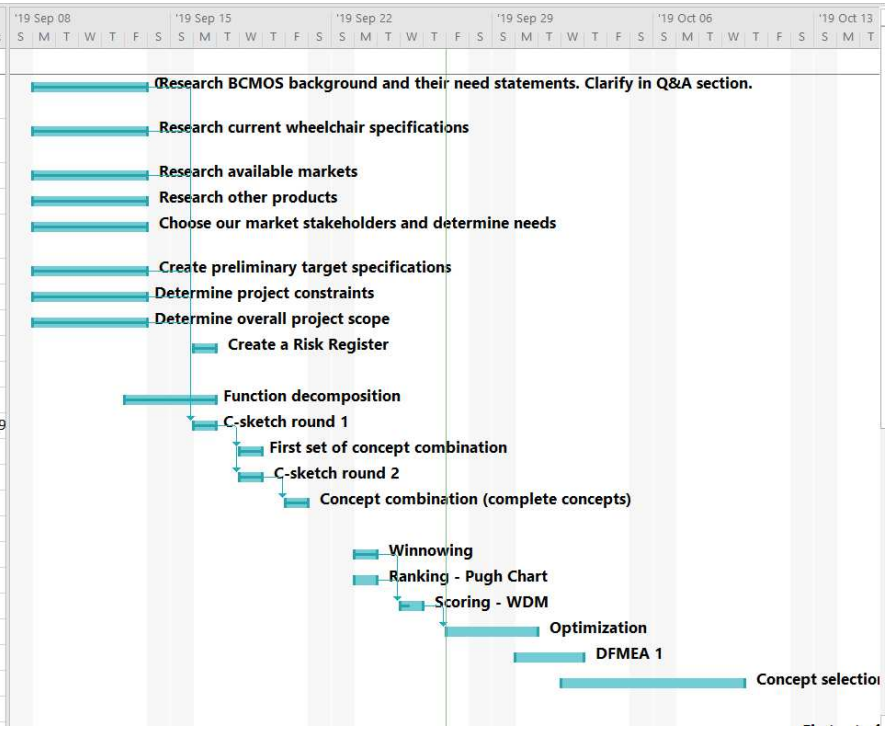
1. Complete scoring of our four full concepts in the WDM
2. Optimization and DFMEA
3. Be ready for CSR

Action Items for Next Week:

Name	Action(s)	Due Date(s)
All	Score full concepts in WDM	10/06
All	Optimize selected concept	10/06
All	Organize documents for CSR	10/06

Category	Requirement	Metric		Acceptable Threshold			Justification	
		Entity to be measured	Units	Min.	Max.	Y/N		
Management								
Management	A report that aligns with the provided rubric will be completed by November 15	Report completion	N/A			Y		
Management	The team will be prepared for a concept selection review on October 10	Team preparedness	N/A			Y		
Management	A presentation will be prepared that aligns with the provided rubric by November 20	Presentation completeness	N/A			Y		
Safety								
Safety	The device is less prone to tipping than the current TrailRider	Survey of how safe the trail rider feels.	0-10	0	10		Since we lack the time and resources to do proper analysis on tipping, impact force, etc, we can just survey group members for score. If we can come up with a more quantitative metric later on, we can use that as well.	
Cost								
Cost	The total cost of the TrailRider will be less than $9000 CAD	Cost	CAD	0	9000		Average annual disposable income of disable people is approximately $9000. While the current $7500 is not the worst, it can be improved.	
Storage + Handling								
Storage + Handling	The device can fit inside of a van when it is not in use	Transportation volume	m^3	0	1.7		Current TrailRider's folded volume is 172 cm x 82 cm x 61 cm = 0.860344 m^3. Assume that folded geometries are standard (ex: no infinitely thin cylinder). We used volume instead of vehicle class because many disabled people rely on public transport, which has more variation and does not have clearly defined vehicle classes. We can also define a cap for a specific dimension need later if needed (ex: to fit an ambulance, to fit common cars, etc).	
Ergonomics								
Ergonomics	A rider is able to sit comfortably on the TrailRider for at least 2 hours	Rider comfort time	Hours	2	N/A		2 hours is the time for their short trails, while 5 hours is an estimate for what their longer trails would take.	
Durability								
Durability	Device has a predicted service life of at least 10 years	Service life	Years	10	N/A		A good measure of durability is how much it needs to be serviced. Once we generated concepts, we would have a better idea on identifying weak points, or we can have something for an expert to look at and help us evaluate.	
Rider useability								
Rider useability								

	Task Mode	Task Name	Duration	Start	Finish	Predecess
1		Needs Assessment				
2	✓	Research BCMOS background and their need statements. Clarify in Q&A section.	5 days	Mon 19-09-09	Fri 19-09-13	
3	✓	Research current wheelchair specifications	5 days	Mon 19-09-09	Fri 19-09-13	
4	✓	Research available markets	5 days	Mon 19-09-09	Fri 19-09-13	
5	✓	Research other products	5 days	Mon 19-09-09	Fri 19-09-13	
6	✓	Choose our market stakeholders and determine needs	5 days	Mon 19-09-09	Fri 19-09-13	
7	✓	Create preliminary target specifications	5 days	Mon 19-09-09	Fri 19-09-13	
8	✓	Determine project constraints	5 days	Mon 19-09-09	Fri 19-09-13	
9	✓	Determine overall project scope	5 days	Mon 19-09-09	Fri 19-09-13	
10	✓	Create a Risk Register	1 day	Mon 19-09-16	Mon 19-09-16	
11		Concept Generation				
12	✓	Function decomposition	2 days	Fri 19-09-13	Mon 19-09-16	
13	✓	C-sketch round 1	1 day	Mon 19-09-16	Mon 19-09-16	2,3,4,7,8,9
14	✓	First set of concept combination	1 day	Wed 19-09-18	Wed 19-09-18	13
15	✓	C-sketch round 2	1 day	Wed 19-09-18	Wed 19-09-18	13
16	✓	Concept combination (complete concepts)	1 day	Fri 19-09-20	Fri 19-09-20	15
17		Concept Evaluation				
18	✓	Winnowing	1 day	Mon 19-09-23	Mon 19-09-23	
19		Ranking - Pugh Chart	1 day	Mon 19-09-23	Mon 19-09-23	
20		Scoring - WDM	1 day	Wed 19-09-25	Wed 19-09-25	19,18
21		Optimization	2 days	Fri 19-09-27	Mon 19-09-30	20
22		DFMEA 1	3 days	Mon 19-09-30	Wed 19-10-02	
23		Concept selection presentation	6 days	Wed 19-10-02	Wed 19-10-09	
24		Design				



24		Design				
25		First set of iterations (of final concept)	1 day	Fri 19-10-11	Fri 19-10-11	
26		Calculations & stress analysis	5 days	Mon 19-10-14	Fri 19-10-18	
27		Preliminary costing & LCA	5 days	Mon 19-10-14	Fri 19-10-18	
28		Second set of iterations	5 days	Mon 19-10-21	Fri 19-10-25	
29		Secondary costing & LCA	5 days	Mon 19-10-21	Fri 19-10-25	
30		DFMEA 2	3 days	Wed 19-10-23	Fri 19-10-25	
31		Complete detailed CAD of key components	5 days	Mon 19-10-21	Fri 19-10-25	
32		Closeout				
33		Report mock deadline	21 days	Fri 19-10-11	Fri 19-11-08	
34		Report actual deadline	26 days	Fri 19-10-11	Fri 19-11-15	
35		Presentation mock deadline	6 days	Fri 19-11-08	Fri 19-11-15	
36		Presentation actual deadline	9 days	Fri 19-11-08	Wed 19-11-20	
37		Logbook submission	2 days	Thu 19-11-28	Fri 19-11-29