



Baby Guerrero Technologies

Official Test Plan

ENSC 440/305 Capstone Project

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Mechanical System Test Plan

Test Case	Pass	Fail
In the worm drive, the worm meshes smoothly with spur gear.		
The spur gear of the worm drive meshes smoothly with the spur gear of the potentiometer.		
The clamping hub of the arm is fixed tightly to the shaft of the worm drive.		
Are the cables attached tightly to the arm and brake levers.		
Both sides are synchronized so that they brake simultaneously.		
The motor rotates when power is supplied.		
The are is non-backdrivable (i.e. it holds its position when power is turned off).		
The brake pads are well-aligned with the rims.		
The mechanical parts are out of the way of the user.		
The brake pads grip the rims when the brakes are engaged.		
There is significant resistance on the wheels when the brakes are engaged.		
The brake pads do not grip the rims when the brakes are disengaged.		
There is minimal resistance on the wheels when the brakes are disengaged.		

Battery Unit Test Plan

Test Case	Pass	Fail
The battery is supplying 12V.		
Power switch functions correctly.		
The battery is safely insulated.		

Sensor Unit Test Plan

Test Case	Pass	Fail
The touch sensor activates when touched.		
The touch sensor activates immediately (<1sec) after an intentional touch.		
The touch sensor is resistant to false activations from nudges and vibrations.		
The touch sensor works with gloves.		
The potentiometer rotates smoothly and accurately.		
The potentiometer is effective at stopping the arm at the correct angles.		

Electronics Unit Test Plan

Test Case	Pass	Fail
The LEDs come on when power is supplied.		
The wires are well insulated and not loose.		

Software Test Plan

Test Case	Pass	Fail
The algorithm consistently works after powering off in any position.		

Full System Plan

Test Case	Pass	Fail
The stroller still rolls smoothly with brakes disengaged.		
The braking system does not affect the forward, backward and steered movements of the stroller.		
There are no sudden or jerking movements present during the braking process.		
The stroller is foldable with the braking system attached.		

Safe Stopping Test Case

Ensure the stroller comes to a complete and safe stop						
Speed of Stroller at time of release (m/s)	Orientation of Surface					
	Downhill		Flat		Uphill	
	Yes	No	Yes	No	Yes	No
0.0						
0.5						
1.0						