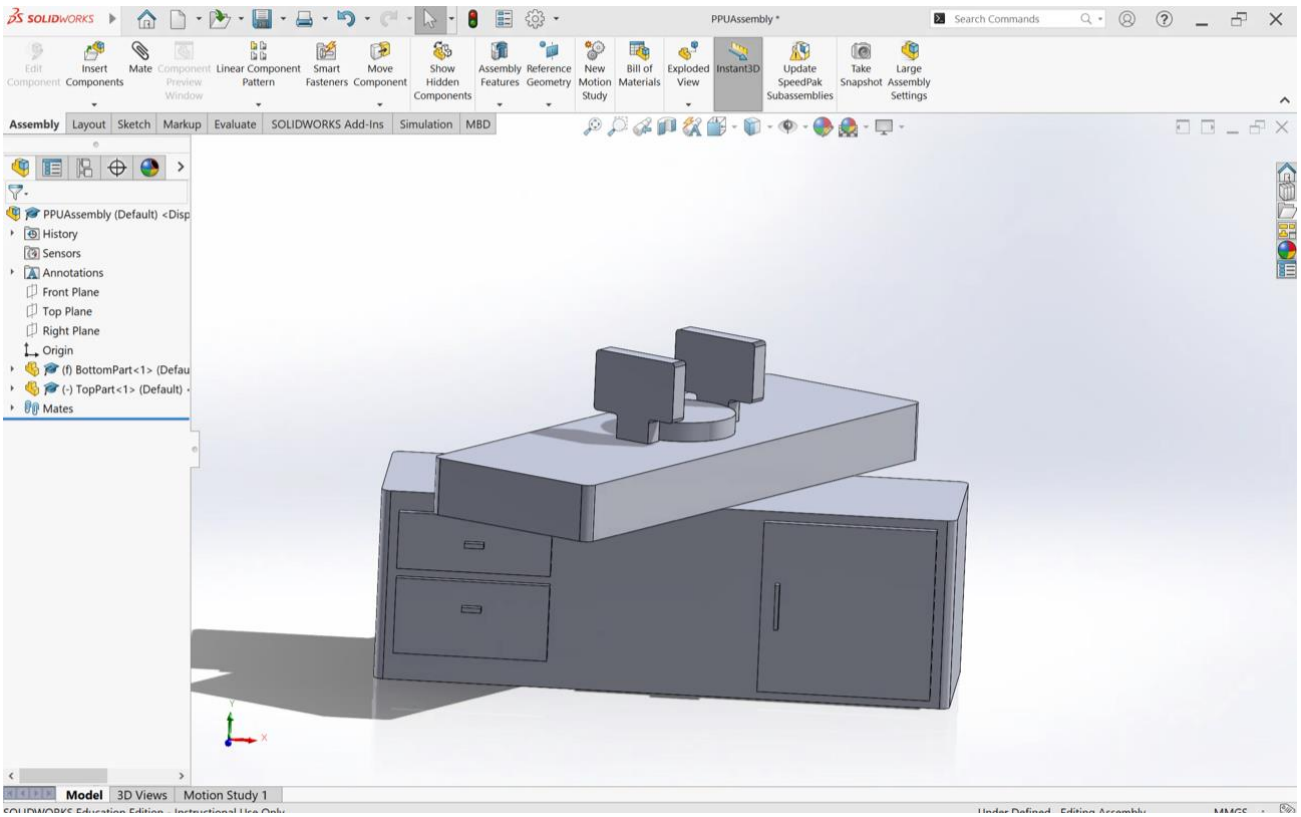
Project Deliverable F: **Prototype I and Customer Feedback**
GNG 1103 – Engineering Design
Group 8

Client Feedback from Detailed Design:

Overall, the client was very satisfied with our initial concept. We included a freezer and dehumidifier which were essential to the client, and our processing station was mobile which was also a need for them. The design we proposed was a round central unit with storage space and the dehumidifier and freezer units attached with a rotating tabletop; the client was very happy with the rotating tabletop and how it could be used to maximize space. Based on the client feedback, when we designed the prototype, we made sure to focus on ensuring mobility, maximizing space, and dedicating adequate space for a large freezer.

Prototype 1:



Critical Components of Prototype 1:

The critical component of the prototype is the tabletop having the ability to rotate 90 degrees (limiting mechanism will be developed in prototype 2). This provides more space for people to work and allows the client to fit the table to the space (can leave the tabletop flat over the base unit if placed in a small room). This is shown on the top prototype. The subsystems of the freezer and dehumidifier are also important parts of the design; the spaces where these will be included are shown in the bottom prototype; they will be included in between the frame. The central circular unit shown on the top prototype will house electrical wires and other electrical components. One critical component that was not included was the wheels on the base of the unit for mobility; now that a basic prototype has been done, with load testing on the frame, these can be included in prototype 2.

Prototyping Test Plan and Results:

Test ID	**Description of Prototype used and of Basic Test Method (What)**	**Test Objective (Why)**	**Description of Results to be Recorded and how these results will be used (How)**	**Estimated Test duration and planned start date (When)**
1	Client meeting 2 Prototype: Hand drawing, simple CAD model	Determine any required or desires changes based on client preferences	Record notes from client meeting	Nov 10: 2nd client meeting
2	SolidWorks static table-top load simulation. Prototype II	Determine max load on the spinning tabletop before failure. A method to determine an appropriate material or structure to support the required weight.	Stress, deformation, factor of safety plot	Digital simulation can only be completed after a detailed CAD prototype is made (prototype II: development starts Nov 9) Since digital, relatively low testing duration/time requirement
3	SolidWorks static fastener simulation Prototype II	Fastener load simulation to determine the appropriate	Stress, Factor of safety plot	^ |

		fasteners according to structure.		
4	SolidWorks static simulations for shelving and storage Prototype II	Determine carrying capacity of storage units for equipment, freezer, and dehydrator.	Stress, Factor of safety plot	^ |
5	SolidWorks overall weight on wheels Prototype II	Determine how many wheels/contact points are necessary to support the overall weight of the workstation	Based on decided wheels, calculate load capacity of one. Divide total force of gravity by the max load of one wheel. Consider weight of equipment and factor of safety	^ |

Stopping Criteria

1. When client is satisfied with overall design and features
2. 3. 4. When acceptable results for max load on fasteners, tabletops and shelving are met.

General and Client Feedback on Prototype 1:

We have not yet received any updated feedback from the client. For now, we will move forward with designing our second prototype and including more detailed subsystems; once feedback is received it will be incorporated into both the design and the test plan.

Updated Test Plan for Prototype 2:

November 9: Submit Prototype 1, which includes CAD designs of the various sub-sections

November 9-12: Receive feedback from Client Meet 3, run tests on Prototypes 1 and 2

November 12: Submit Prototype 2 and receive additional feedback from the client

November 12-26: Continue to run tests on Prototypes 2 and 3, adjust as needed, implement client feedback

November 26: Submit Prototype 3 and receive client feedback