

Hardware Review 1

The hardware review consists of the components needed in the completion of the design. The first hardware review 1 deliverable suggested that we needed to be at 50% of the entire project. During our visit with Dr. Oman and Amy, it was determined that we still needed work on calculations and that the CAD process needs to be reevaluated. The subsystems that were divided from the Spring semester needs to followed. The CAD design will need to be completed and the calculations by the next Staff Meeting.

The following list indicates the tasks that need to be completed by the next Hardware Review 2.

Michele Tsosie

1. Reevaluate blade design and incorporate calculations for the entire team to view. Blade design will involve the components needed for variables needed for the nacelle and the hub.
2. The hub will need to be designed to hold the blades and attach to the shaft of the wind turbine.
3. Visit with the Fabrication Lab to utilize the printer for a 3D print (Kellan).
4. Incorporate blade design into solidworks.

Fahad Almutairi

1. Shaft design needs to have a Factor of safety
2. Shaft Analysis will need to be reevaluated because the diameter does not follow the dimensions needed for the design.
3. Incorporate the bearings in the calculations

Ahmad Saeed

1. Determine the CAD until the calculations are completed. Once calculations are completed then a CAD drawing can be determined
2. Apply a FEA to the CAD drawing to determine possible failures and determine the effects of the forces involved.
3. Direct Yaw blade needs to have calculations for the design process.

Besongsni Ntoug

1. Purchase prototype system of the default system in other to understand the CAD situation physically so as to determine what adjustment that needs to be made to get to completion. As predicted the default dimension was faulty. The client declared it is not acceptable without the calculations and precise dimensions data.
2. Did research on the motor and came up with the right motor for the team that everyone agreed and was purchased.
3. Obtained a hollow mild steel from the NAU wind turbine farm and bought hard steel-carbon to build the base flange and currently working on calculations.

4. Contacted a 3D company in phoenix (Purple Porcupine- 3D Printing Services) and got their feedback asking our due dates, material properties and dimensions.
5. Created a 3D CAD package for a steel tower and the base flange and did an assembly instead of the pre-existing design for using the 3D print which is inaccurate and not stable.
6. Visit with the client on details of the design that are not working and are working.

Abdulrahman Alhossaimi

1. Determine the dimensions of the nacelle to declare the aerodynamic shape of the apparatus
2. Design the nacelle after calculations are determined
3. Purchase material and determine the design through CAD material selection
4. Identify the components that will be placed in the nacelle.