ASEN 4018 Senior Projects: Lab Notebook

1. 9/6/21
   1. Goals:
      1. Define project scope with Tim and Jed
   2. Time Worked:
      1. 2 hours
   3. Accomplishments:
      1. Defined project scope with Tim and Jed
2. 9/8/21
   1. Goals:
      1. Revise requirements and ConOps for PDD
   2. Time Worked:
      1. 3 hours
   3. Accomplishments:
      1. PDD ready for submission to customer
3. 9/10/21
   1. Goals:
      1. Revise PDD based on customer feedback
   2. Time Worked:
      1. 1.5 hours
   3. Accomplishments:
      1. PDD signed and ready for submission to Dr. Jackson
4. 9/14/21
   1. Goals:
      1. Adjust requirements based on PDD feedback
      2. Research ski jumper fbd
      3. Research validity of platform design
   2. Time Worked:
      1. 3 hours
   3. Accomplishments:
      1. Functional requirements adjusted
      2. Ski jumped fbd researched
      3. Platform design fleshed out
5. 9/16/21
   1. Goals:
      1. Preliminary calculations for platform design
   2. Time Worked:
      1. 1.5 hours
   3. Accomplishments:
      1. Found 100/1 ratio for height (ft) to Gs with ideal assumptions
6. 9/20/21
   1. Goals:
      1. Flesh out platform design
   2. Time Worked:
      1. 1 hour
   3. Accomplishments:
      1. More concrete math on platform design
      2. Developed categories for trade studies
7. 9/21/21
   1. Goals:
      1. Work on trade studies
   2. Time Worked:
      1. 2 hours
   3. Accomplishments:
      1. Research and math towards trade studies
      2. Fleshed out categories, began justifications
8. 9/22/21
   1. Goals:
      1. Finish trade studies
   2. Time Worked:
      1. 3 hours
   3. Accomplishments:
      1. Finished foot force profile trade study
      2. Began work on design requirements
9. 9/23/21
   1. Goals:
      1. Finish trade studies
      2. Complete trade study metrics and justifications
      3. Work on design requirements
   2. Time Worked:
      1. 2.75 hours
   3. Accomplishments:
      1. Finished trade studies and metrics
      2. Progress on trade study justifications
      3. Progress on design requirements
10. 9/24/21
    1. Goals:
       1. Finish trade study justifications
       2. Finish design requirements
    2. Time Worked:
       1. 1.75 hours
    3. Accomplishments:
       1. Finished trade study justifications
       2. Progress on design documents
11. 9/26/21
    1. Goals:
       1. Finish discussions on force profile study
       2. Revise conops
       3. Tabulate requirements
    2. Time worked:
       1. 6 hours
    3. Accomplishments:
       1. Finished discussions on force profile study
       2. Progress on mechanical discussion
       3. Tabulated requirements
12. 9/27/21
    1. Goals:
       1. Meet with T&J
       2. Final revision of CDD
    2. Time worked:
       1. 3.25 hours
    3. Accomplishments:
       1. Met with T&J to review CDD
       2. Finished CDD
13. 9/28/21
    1. Goals:
       1. Define method for platform acceleration curve
       2. Build model for forces on body due to platform
       3. Find information on hydraulics, or other lifting actuators
    2. Time worked:
       1. 2 hours
    3. Accomplishments
       1. Found information on linear actuators for feasibility analysis
14. 9/29/21
    1. Goals:
       1. Finish method for platform acceleration curve
    2. Time worked:
       1. 2 hours
    3. Accomplishments
       1. Finished method for platform acceleration curve
       2. Decided official team roles
15. 9/30/21
    1. Goals:
       1. Build forces model
       2. Work on feasibility analysis for platform
       3. Decide baseline design
    2. Time worked:
       1. 4.5 hours
    3. Accomplishments
       1. Worked on feasibility analysis for platform
       2. Decided to use platform for baseline design
       3. A picture containing text, person

          Description automatically generated
16. 10/1/21
    1. Goals:
       1. Finish forces model
    2. Time worked:
       1. 1.5 hours
    3. Accomplishments:
       1. Worked on forces model
17. 10/3/21
    1. Goals:
       1. Update administrative information
    2. Time worked:
       1. 0.5 hours
    3. Accomplishments:
       1. Updated administrative information
18. 10/4/21
    1. Goals:
       1. Feasibility analysis
       2. Visual feasibility
       3. Platform actuator model
    2. Time worked:
       1. 3.25 hours
    3. Accomplishments:
       1. Reached out to vr jump developers
       2. Met with T&J
       3. Platform model without impulse done
19. 10/5/21
    1. Goals:
       1. Feasibility analyses for mechanical
       2. Acceleration model
    2. Time worked:
       1. 2 hours
    3. Accomplishments
       1. Finished acceleration model
20. 10/6/21
    1. Goals:
       1. Feasibility analyses for mechanical
       2. PDR slides for mechanical
    2. Time worked:
       1. 4 hours
    3. Accomplishments:
       1. Feasibility analyses for mechanical
21. 10/7/21
    1. Goals:
       1. Feasibility analysis slides (mech)
       2. Add in-line phase to simulation
    2. Time worked:
       1. 2.5 hours
    3. Accomplishments:
       1. Feasibility analysis slides (just need to fix plots and add equations)
       2. Added in-line phase
22. 10/8/21
    1. Goals:
       1. Implement pdr modifications from peer review
    2. Time worked:
       1. 1 hour
    3. Accomplishments
       1. Added in-line phase to discussion to slides
       2. Fixed plots
       3. Added equations
23. 10/9/21
    1. Goals:
       1. Ball systems engineer pdr review
    2. Time worked:
       1. 2.75 hours
    3. Accomplishments:
       1. Drafted list for pdr improvements
       2. Began reworking of slides
24. 10/10/21
    1. Goals:
       1. Ball systems engineer pdr review pt 2
    2. Time worked:
       1. 8 hours
    3. Accomplishments:
       1. Finished review
       2. Updated PDR based on relevant critiques from Collin and Jason
       3. Finished PDR – conops, mech feasibility, fos, costs, fbd, org, review
25. 10/11/21
    1. Goals:
       1. Practice presentation and develop talking points
       2. Brainstorm possible holes in design and then develop answers to patch those holes
       3. Attend NANOSAM pdr
    2. Time worked:
       1. 2 hours
    3. Accomplishments:
       1. Practiced presentation
       2. Developed answers to potential questions
       3. Attended NANOSAM pdr
26. 10/12/21
    1. Goals:
       1. Practice pdr
       2. PDR presentation
    2. Time worked:
       1. 2.25 hours
    3. Accomplishments:
       1. Pdr presentation
27. 10/13/21
    1. Goals:
       1. Review pdr
       2. Come up with better structural design
    2. Time worked:
       1. 1 hour
    3. Accomplishments:
       1. Came up with 3 new designs to be analyzed
28. 10/14/21
    1. Goals:
       1. Develop rolling scissor design
       2. Look into Korean ordering issues
    2. Time worked:
       1. 2.75 hours
    3. Accomplishments:
       1. Need quote to ensure paypal is possible for Korean purchase, or have Nordic buy it for us with promised extra $$
       2. Developed preliminary model for scissor lift design
       3. Diagram

          Description automatically generated with medium confidence
29. 10/15/21
    1. Goals:
       1. Finish developing scissor design
    2. Time worked:
    3. Accomplishments: