Bawan Kurdo Professor Ayala MET 330 July 16, 2023

Test 3 Reflection

During this test, my work is in reference to the objective 'compute pressure and the forces associate with it in a stagnant fluid' as most of these problems had delt with pressure and forces.

In terms of my work compared to the solutions there are differences. Problem 1 for instance had me start the same way obtaining area and distances but after that it went in different directions as I used the wrong formula to compute moment as the same with concept of drag and Reynolds number. I should have implemented Reynolds number which I thought wasn't needed. I thought finding the force for both beams were simpler, but it seems me taking a shortcut that didn't pan out again. If I were to do this test again, I would look through example problems to verify if I was on the right track as a way of guidance instead of just picking the wrong formula and going with it. For problem 2 I also started out great but once again everything fell apart as I was off by 0.6 ft due to slight differences of how I integrated manning equation. Not to mention I forgot to check if it was critical or not. If I were to do this again, I would be sure to integrate manning equation as shown in the solutions as it would've meant that my solution wasn't off by 0.6 ft and to be sure to check the status of the open channel. Problem 3 was similar as I used equation 15-6 but I solved for velocity and used that equation to find h which is where everything fell apart. Had I not solved for velocity and solved for Q I would've been fine for this problem. On future tests I will to be sure to examine practice problems and notes more to make

sure I was on the right track all the way through instead of just the beginning. For problem 4 was the rough one as I initially did it through Bernoulli's equation, but I thought I didn't need it and opted for a simpler formula which I see was a mistake. As you can imagine this completely went separate ways and was by far the worst of all the problems in terms of my performance. I thought I was being smart about it and clearly overthinking won that battle and lead me astray. Had I done this problem again I would've stayed with my initial process for this problem and would've certainly gotten more credit. Finally for problem 5 this was my best problem as it was virtually correct but off by 0.01. so, there wasn't any issues here. Overall, my advice to myself for future tests is to stop overthinking every problem as most of the time it's really as simple as it comes and with use of references in HW and the textbook I could've faired better.

Based on the rubric given I believe my grade should be a 62% as for problems 1-5 I should have 2/5, 4/6, 3/5, 1/7, and 4/4 which is a 51.8 + 5 for HW and +5 for reflection. I believe my strengths is that I know how to start these problems, but my weakness is overthinking which leads me away from the correct processes. If I spent the test not over analyzing everything I could've well gotten a higher score.

I didn't really have any issues completing this test aside from my own negligence as I understood the problems, but the issues came from me not taking the time to fully understand what I need to account for such as proper formulas, Reynolds numbers, etc. As me overthinking lead to me not including crucial areas.

The steps I took to complete the test was to analyze chapters 12-16 in the textbook along with the HW solutions in the modules to review formulas, drag and force, etc. If I were to change something it would be to incorporate more of the HW questions along with analyzing the example problems more to better understand what are needed to solve the problems.

A concept that I have learned is knowing how to solve for pressure increments as that was the one concept that I was able to implement properly and correctly. Which engineers use when dealing with monitoring vacuum pumps, liquid pressure, etc.

I feel that I will be using everything I know in future courses and in the Air Force as that's where I would like to apply my engineering degree to. Depending on what I get assigned to me believe that some of them would involve the concepts discussed in class such as Bernoulli's Principle which will be important for me to know. But I don't know exactly how I would use it until I settle on what MOS I want to pursue.

I have not been able to apply these concepts to my work as my internship is more AutoCAD work, in terms of courses none that I can think of as of right now.

The areas I feel most improves are in solving for change in pressure and computing hydraulic radius as those were areas, I was initially not comfortable with.

I feel that this course will intersect with my career as depending on the MOS I choose in the Air Force I will work with some aspects of fluid mechanics especially if I'm dealing with aircrafts.

I roughly took around 13 hours between Saturday and Sunday with a brief break now and then to complete this test. If I were to do this differently I would've spent a day on each problem as that would've been more beneficial than cramming it in the last two days but I am making progress and aside from stupid mistakes I know I can do this.