Roy Shepard
MET 330 FALL24 Final Reflective Letter

1. Persuade, both your instructor and the institution, that your work meets the objectives for this course.

Following my course in fluid mechanics with Professor Ayla, I am now capable of comprehending and articulating the essential characteristics of fluid properties, such as viscosity and pressure, among others. I may also apply the concept of pressure in a stationary fluid, along with the related forces, including magnitude, position, and direction. I can exhibit precision in my calculations when performing them. An exemplary instance of this is Test 1, were we determined the requisite force to open the tank's gate. I can study and ascertain buoyancy, evaluate the stability of objects in a fluid, and justify the stability of the conditions present. A further exemplary instance of this is Test 1once more. I utilized cable force and buoyancy properties to construct a neutrally buoyant device when the gate was opened, and the water attained a specific level. I successfully applied and integrated the principles of energy conservation using the Bernoulli equation and mass in various fluid flow systems to resolve intricate flow-related issues. I demonstrated in Test 2 how we altered the Bernoulli equation to calculate pressure and power. I am now capable of analyzing, elucidating, and resolving issues pertaining to fluid dynamics in pipes and fittings configured in series, with an emphasis on energy losses and system efficiency. Test 2 and Test 3 serve as excellent demonstrations of my capability to accomplish this task. Identify, assess, and resolve various industrial challenges related to open-channel flow and forces exerted by moving fluids, providing recommendations for practical solutions. Test 2 exemplifies my engagement with open channels and the calculation of various dimensions and configurations. Comprehend, recognize, and compute fluid flow metrics, including pressure, fluid velocity, and flow rate, utilizing various sensors with accuracy. Test 2 exemplifies the integration of a flow nozzle into the system and the subsequent pressure calculations. Comprehend, elucidate, and evaluate the operational principles of fluid machinery, namely pumps, and assess their practical applications. Test 3 exemplifies this by requiring calculations for losses and the selection of the appropriate pump based on those calculations.

2. Answer the following questions, using links or excerpts (visual, audio, or written) from your ePortfolio to illustrate your answers:

1) Where is your learning demonstrated in the course?

My learning can be found on my google drive wordpress site or wordpress site .

2) What areas did you feel you were most successful, or improved the most?

I feel I was very successful with the first test content. I was able to provide force, and I was able to figure out the correct cable force and the correct buoy size.

I was most improved on using Bernoulli equations for test 3. On Test 2 I was close but not as good as Test 3. I reviewed Test 2 and corrected a lot of my error and assumptions.

3) How do you see this course's content intersecting with your field or career?

As of right now I do not see this content interacting with my field or career. I work as a reliability engineer and this stuff does not interface with my work.

4) Have you been able to apply concepts you have learned in the course to what you do at work or in other courses?

No, I have not applied these concepts to other work or another course yet. I am not sure if I will.

5) How, when, where and why you might use this information or skill in the future?

I would use this info if I landed some sort of mechanical engineering job that supports civil engineering on building new plants or refurbishing plants. I am sure they will want to revise the pipe system, and they will want to know if the old system was efficient. If building new they may just want a good working new system. I can apply the fundamentals I have learned to that career path if I ever decide to change paths.

6) Do you think what you learn is important for your professional career?

Not particular to my career, right now I work in the aerospace industry, and I work in reliability engineering. We do a lot of different calculations on how good a product is or will be based on field data or estimated data.

7) Where do you think you will be using everything you learned?

I am not sure yet, possibly if I change jobs or career paths. I am happy with what I do now.

8) If you were starting this class again, what advice would you give yourself to ensure that you had a successful semester?

Practice, Practice, Practice. Professor said it in the beginning to do as many problems as possible. You find yourself reviewing and assessing lots of similar problems. I think it is better to practice a bunch early on.

3. Also answer the following questions:

1) After taking this class, in what ways have you improved as an engineer? What brought about those improvements?

I have improved by seeing that is okay to take assumptions when you don't know. Just make sure you note all the assumptions you take so another person can easily follow what you did. If they think your assumption was wrong or have a better way you can work together to find a new answer.

2) What was your biggest accomplishment in the course? Be specific with respect to your work and the topics you learned in the course.

I feel like Improved the most on Bernoulli equation and losses. I did okay on test 2 but I felt and seen an improvement on test 3 when we continued with the same topics but with a little more expansion. I think what helped me the most with Test 3 is that felt the most real world as something a company would do. I think that is when it clicked for me.

3) What skills did you master in this course? How are they reflected in the assignments (HW, tests, etc.) Be specific.

I feel based on Test 1 I was able to calculations for stage net fluids. I feel like I did pretty good on Test 1. I followed all the concepts.

4) What do you feel are your strengths and weaknesses? Explain while making specific references to your work.

I feel like my strengths are solving problems with stagnant fluid. On the test I feel I did a great job at doing that. I was able to determine the cable force and utilize that force to determine a buoy size. I like it when we have problems that seem very real like. I could easily relate to the problem, so I had a good understanding of what was supposed to happen.

5) How did you think about this course before you took it and how you think about it now that it is over? How many of your assumptions of understandings changed? Why?

I thought this course was going to be very tough and require a lot of time to understand the topic. I thought we would have just been thrown the info and have no help. My first assumption was true. This work requires a lot of time work to understand. You also need a lot of practice so pick a lot of problems from the book. My next assumption was wrong. We were not left to wolves. Professor Ayla makes himself available to help you. His answers may not be your favorite, but he makes you think about what you are doing and why you are doing it. Overall, I had a great experience in the class.