Dario Baxter

Final Reflection

My learning experience in this course was challenging. I tend to be forgetful and make small simple mistakes that greatly affect the answers to a lot of the problems. With the wide variety of charts and tables that were used throughout this course I never really got comfortable and constantly doubted myself. However, my knowledge of fluids is far greater than it was before I started the class.

After completing this course, I am more knowledgeable in fluid mechanics and their different properties and how those properties can be affected by temperature. I learned how to compute pressure and the forces of fluid acting on things like walls. I understand what buoyancy is and I am now able to determine an object's stability while floating or submerged in a fluid. I learned how to explain the fluid dynamics in pipes and fittings and apply the principles of conservation of energy (Bernoulli's equation) and mass to fluid flow systems. I am now able to compute friction losses in pipes for a variety of configurations, identify and solve different very specific industrial problems, such as open-channel flow, cavitation, water hammer, drag, lift, and forces in pipes, and learn about different instruments to measure fluid flow quantities. Finally, I can explain how fluid machinery works (focused on pumps) and compute and select the appropriate pump for different pipe system configurations.

My learning is demonstrated in this course by my test grades slowly improving. I was most successful in understanding the core concepts of the different aspects of this course, I improved the most in learning how to account for friction losses in pipe systems. This course content will be a major part of my career due to my current work in hydropower thought on the electrical side now. When I must size new pumps or install new piping systems, I will very likely refer to the materials I learned in this class. I have not been able to apply the concepts I learned in this class yet. But now that I know, I can potentially volunteer myself for projects that include the concepts I've learned. What I've learned is very important in my career considering my job involves hydroelectricity which includes different fluids, pipes, pumps, and structures with forces of fluids acting upon them. I could potentially use everything I learned during this course when I need to replace pumps or install new pipes within the power plant. If I started this class again, I would tell myself to interact with the professor more and pay attention to the small details. Some of the concepts that took days to figure out on my own could have taken much less time if I asked for help.

After taking this class I have learned to pay closer attention to the small details; I have learned how to create and understand charts; I learned how to use Excel to do calculations more efficiently, and I learned the concept of fluid mechanics. My biggest accomplishment in this course was learning how to calculate minor losses in a piping system, sizing a pump to meet the demands of that system, and how to pre-size pipe by using critical velocity. The skill I mastered in the course was determining minor losses in a piping system. Initially, I struggled and got that portion wrong on test 2 due to not accounting for all losses. But on the homework and final test afterward, I got that portion correct. My main weakness is messing up the small details. On test 3 I was 1 decimal place, 1 miss written equation, and one uncompleted problem from making an A but instead, I got a C. Initially I thought this course was going to be very challenging, especially in a summer class time frame and I was correct. I thought I could figure it out on my own just using the book and the information provided in the examples and modules. I was wrong, and my grade reflected it. All my assumptions of understanding changed because I ran into several concepts that I did not fully understand which led to my test grades suffering.