

## Course Reflection

Course Fluid Mechanics (MET 350) covered many objectives. The covered different variations of a system. We had to determine the height of the fluid to get a certain flow rate which covered the principles of conservation of energy (Bernoulli's equation) and mass to fluid flow systems. Computed friction factor losses in pipe and fitting and knowing the nature of fluids and different fluid properties such as viscosity and pressure. We also had to determine how large a buoy should be for it to open a gate when the depth of the gasoline reached 90% of the height and determine if it would remain stable, which covered the learning objective buoyancy and stability, and computing pressure and forces. Compute of the pipe was thick enough to handle water hammer, design an open channel flow system in case of overflow, and calculate the forces the water applied to the pipe so the civil engineer could design their support system, which covered the learning objective Identify and solve for different very specific industrial problems, such as, open channel flow, cavitation, water hammer, drag, lift, forces in pipes, and learn about different instruments to measure fluid flow quantities (such as, pressure, fluid velocity, flow velocity, etc.). Calculate the force of an object if it was being drag across the bottom of tank and the object couldn't tip over, which covered the course objective drag and lift. We also looked at what the flow rate would be if a pipe was added in parallel, which covered Compute friction losses in pipes for a variety of configurations (series, parallel, network, etc.). One of the final projects in the class we had to design a pump system, which cover learning objective Explain how fluid-machinery work (focused on pumps) and Compute and select the appropriate pump for different pipe system configurations.

My learning experience in the course was excellent. I really got a better understand of how to solve any type of fluid mechanics problem. My learning process consist of listening to the lecture, taking notes, doing homework, and referring back to my notes or the material available to me from canvas.

My type of learning was demonstrated in the class when the instructor would ask question which gave us an incentive to think about the problem. I feel like I was most successful on the topics of calculating forces, pump head, head loss, and everything else needed to design a pipe system. Where I could improve is calculating water hammer, open channel flow and buoyancy stability. I defiantly see using this course material in my future. Fluids is everywhere. I related a lot of this course to my fundamental of electrical class. Although they were two different topic and of the same concept applied. Getting a job dealing with pipe system is one example where I will use this course material. I definitely think what I learn in this course is important for my future. Fluids are everywhere and in order to a good engineer you need to know the properties of fluid and how they reacted to thing even if you are not dealing with them directly. If I were to retake this class, I would definitely stay on task or work ahead if I could. I use the office hours that was available.

During this class we had to do a group project and really help my think critically and learn how to communicate better. The test in this class was real-world problem and it made you think more critically than follow step from a textbook. The professor ask question in a way that made think and have more of idea of everything that was going on. He also taught you how to any problem that came your way. I feel like my biggest accomplishment was the pump project at the end. It summed up majority or pipe calculation that we learned, and it gave me a since in confidence knowing that I could do that project. I have a much better idea of how to use excel.

Excel is a really big help when performing calculation especially and you have due to many iterations to get your answer. feel like I was most successful on the topics of calculating forces, pump head, head loss, and everything else needed to design a pipe system. Where I could improve is calculating water hammer, open channel flow and buoyancy stability. Before I took this class, I had a general idea of what Bernoulli's principle was. I knew that it was applied to fluids to calculate pressure and flow rate. What I did not know was the energy loss due to friction factor or the pipe and fitting. I knew that fluid mechanics was everywhere, and this class just confirmed really emptied that even more.