

After an extensive semester; with a great instructor and multiple new things learned, in my opinion the MET 330, fluid mechanics, made a huge impact not only in my knowledge but also built some good aspects to my academic life that I will be taking for the rest of my college and professional career. First, I would like to mention how this course had helped me build my confidence, help me understand how I should manage my time when working in a long project, understanding how projects can be billed with different parts and aspects of a bigger scenario, not overthink when working and make sure you are paying attention to every single detail even the smallest details make a huge difference at the end. as well as talking to anyone above you, or that has more knowledge about a topic, there's nothing wrong with asking questions. Now speaking in objectives, looking to the objectives presented in the beginning of the semester, which looked very far in abroad spectrum of information that was gonna be covered throughout the semester, I can clearly see all of those that were worked through the semester, them being:

1. Understand and describe the fundamental nature of fluids and accurately define different fluid properties, such as viscosity and pressure.
2. Apply concepts of and compute pressure and the associated forces (magnitude, location, and direction) in a stagnant fluid, demonstrating accuracy in calculations.
3. Analyze and determine buoyancy and evaluate the stability of objects when floating or submerged in a fluid, justifying the conditions of stability.
4. Apply and integrate the principles of conservation of energy (Bernoulli's equation) and mass to various fluid flow systems, solving complex flow-related problems.
5. Understand, explain, and apply the principles of similitude and dimensional analysis to experimental and real-world fluid mechanics scenarios.
6. Analyze, explain, and solve problems related to fluid dynamics in pipes and fittings arranged in series, focusing on energy losses and system efficiency.
7. Identify, evaluate, and solve diverse industrial problems involving open-channel flow and forces due to moving fluids, making recommendations for practical solutions.
8. Understand, identify, and calculate using different instruments to measure fluid flow quantities, such as pressure, fluid velocity, and flow rate, with precision.
9. Understand, explain, and assess the working principles of fluid machinery,

particularly pumps, and evaluate their application in real-world scenarios.

Looking through my eportfolio it's clear to see the development of my knowledge, how I worded my homework to how I worded the same thought process on the exam; my excel sheets, not being organized with linked cells and just very basic structured files from my first test, to the Excel sheet from test three with all the variables cited, as well as the units. Like mentioned earlier in this reflection. In my opinion, the main topic from this class that I would take for my entire professional life is the confidence that he gave me on working on things that I know, and applying my knowledge and not overthinking, as well with time management, and of course, understanding the importance of an Excel sheet to the professional life of an engineer and being able to apply the formulas and thought process made by hand earlier to an ex-associate was a big skill built and very important to the future. I have not been able to apply my knowledge to what I do in my internship, but with that knowledge, I am sure that the work that I will be able to do from now on will be more specific/important to the design and the water and wastewater company I'm currently working for, and hopefully give me a good background to future jobs I will be executing after I graduate. The main advice I would give myself if taking this course again would be to relax and not overthink, things might seem hard and extensive and they are but it's nothing I am not able to handle in a good way and managing the time to give myself a break and not overload working on something is very important for a good work to be made.

My vision of the entire engineering process has changed after this course, knowing how to use my tools being them software or people not being afraid of asking questions in class or reaching out to people that have more knowledge than me, and that specific topic; working on my Excel sheets, skills, and slowly understanding that the small details make a huge difference in the project or any work that's gonna be executed, definitely making my knowledge more specific enlarge about the fluid mechanics topic, but also building myself as a professional engineer in seeing how the entire thought process of an engineer should be and should happen. In my opinion, my biggest accomplishment in this course was to see the Julia from the beginning of the semester that looked at the first exam and freaked out about the entire system, and now being able to look at the entire system and not being scared and actually comprehending every single part of it and how that part function, and how each part affect the system and even make changes to that system, so it will fit different scenarios that would adapt different flows, pipes, pumps and forces being applied.

The skill that I mastered in the scores was definitely the excel sheet and applying the formulas worked by hand on Excel with the right information and right variables. Looking at the Excel sheets from exam one or even the first homework that we were allowed to use Excel, the difference between formatting, but also knowing how to transcribe a formula correctly has definitely improved a lot and facilitated my work. Even though it was a topic that I felt I improved a lot. My overthinking affected my work in many ways, in the beginning, making me doubt myself and at the end of the semester, not overthinking and being more relaxed, made me miss some very important information and very important steps to the procedure of some Questions and processes for the exam, so finding that balance between overthinking and being confident about my knowledge is being a process throughout this entire course and is definitely something I'm gonna keep working on, but the fluid mechanics class made that switch to my mentality and now I just gotta find the perfect balance between both extremes. At the beginning of the course, I was extremely scared with all the information being explained daily in class, all the procedures for something that in my head was a "simple number" and all the comments I've heard from my other fellow engineers, telling me how hard the class was definitely put me in a position of doubting my abilities and being scared the first half of the semester, pass halfway I saw that my abilities were meeting the knowledge that I needed to pass the class and ace it so building that confidence made me more willing to be vulnerable in class and ask questions, reach out to the professor and really look for the information or anything that I had not understood previously. The class is very much like a step-by-step class so missing one little thing would have affected the rest of my semester, so I was always making sure I understood every single stab being explained by the professor in the class and all the solutions from the homework looking for what I have gotten wrong and right.

Overall, it was a very hard semester, but I would say I am very happy about it, and all the knowledge that I have acquired have absolutely made me reach another level of an engineer, giving me not only the knowledge I would need in future jobs, but also skills that I can use in any scenario of my life from now on.