

MET 330 Fluid mechanics

Final Reflection

Eric Roberts

In this course, I initially faced challenges with solving the problems presented, particularly due to my struggle with fluid mechanics concepts and personal difficulties. These challenges stemmed from a mix of unfamiliarity with the material and my own limitations, such as partial blindness and brain issues. However, with the support of my instructor and classmates, I was able to improve significantly. By working through these challenges, I developed a deeper understanding of the course objectives, including the application of Bernoulli's equation, the analysis of buoyancy, and the evaluation of fluid machinery.

This letter highlights how my navigating this course enabled me to gain knowledge and practice, not just theoretically but also in practical applications. Fluid mechanics, though challenging, has provided me with skills I can use to solve real-world problems and has contributed to my growth as an aspiring engineer.

Challenges and How I Overcame Them

Early in the semester, I struggled with focusing on the problems assigned in class. I made frequent, careless mistakes that hindered my ability to grasp the material fully. For example, on Test 3, Part A, I initially struggled to solve for h_A . I couldn't determine the correct approach due to my brain condition, which sometimes affects my memory and

focus. Additionally, my partial blindness made visualizing diagrams and equations more difficult.

Despite these hurdles, I relied on the support system provided by the course. My professor consistently encouraged me to collaborate with other students, a suggestion I initially resisted. When I finally joined a study group, I saw dramatic improvement. This collaboration allowed me to learn from others, clarify concepts, and approach problems from different perspectives. My success on Test 3, where I applied Bernoulli's equation and incorporated minor losses, marked a turning point in my learning process.

Course Concepts and Practical Applications

One of the most valuable aspects of this course was learning to apply theoretical knowledge to practical scenarios. For example, understanding fluid properties such as viscosity and pressure allowed me to analyze and optimize a pump and filter system at a community pool I used to work at. By calculating pressure losses and determining the appropriate pump size, I was able to improve the system's efficiency, which directly benefited the community.

I also applied these principles to improve appliances in my home. By understanding the flow dynamics in pipes and fittings, I identified ways to enhance water circulation and minimize energy losses. These real-world applications demonstrated the practicality of fluid mechanics and reinforced my understanding of the material.

Intersection with Career Goals

While I do not envision a career heavily focused on fluid mechanics, the course has provided valuable insights that intersect with other areas of engineering. For instance, the principles of fluid dynamics are closely tied to heat transfer, another area I am studying. I expect to see these concepts reappear as I delve deeper into thermodynamics and energy systems.

The problem-solving mindset I developed in this course will also serve me well in my career. Fluid mechanics taught me to approach problems methodically, consider multiple variables, and apply theoretical concepts to practical scenarios. These skills are transferable to many areas of engineering, including my goal of working in a thermodynamics-oriented role.

Growth as an Engineer

This course has contributed significantly to my growth as an engineer. Overcoming the challenges I faced required persistence, adaptability, and a willingness to learn from others. My biggest accomplishment was developing the confidence to tackle problems that initially seemed insurmountable. By the end of the semester, I felt more equipped to handle complex engineering challenges, both in fluid mechanics and beyond.

I recognize that my strengths include my determination and ability to learn from mistakes. However, I also acknowledge my need to work on avoiding careless errors and improving

my initial approach to problem-solving. Moving forward, I plan to build on these lessons to become a more effective and precise engineer.

Conclusion

Fluid mechanics was one of the most challenging courses I have taken, but it was also one of the most rewarding. The knowledge and skills I gained will continue to influence my work as I pursue a career in engineering. While I may not specialize in fluid mechanics, the concepts and methods I learned have broad applications that extend to other areas, such as thermodynamics and energy systems.

This course has not only enhanced my technical skills but also my confidence and ability to work collaboratively. I am grateful for the opportunity to learn and grow, and I look forward to applying these lessons in my future career.