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Reflective Cover Letter

Throughout the course of the Spring semester of 2025 my work and effort in this course has demonstrated my understanding of all the material taught to me. The course objectives depicted in the syllabus require that after the student finishes the course, they should be able to understand, utilize, correct and manipulate various different types of cycles such as: an Otto cycle, a gas turbine cycle, a Brayton cycle, a Rankine cycle, and Refrigeration cycles. It is also outlined that the student should be able to freely utilize the skills learned in using first and second law as well as have an understanding of how fluids are affected under various processes. Throughout the semester, it was my duty as a student to attend, note, and participate in class in every class and ask questions when needed. The aforementioned may appear overwhelming, but on the contrary, it was necessary in order to absorb and understand all that I will need later on in my career. My experience throughout this course required me to not only attend the classes and do the homework, but it also required me to think critically about the course material outside of the class times and form study groups with classmates for discussions. With these experiences, I was able to grasp concepts, utilize tables, read psychrometric charts and understand systems in an easier and more thorough manner compared to my peers.

In the course, I have demonstrated my ability in comprehension of the course material as through the work submitted in as homework assignments, and later on through the submission of tests. The homework assignments reflect critical thinking with regards to how to work through these problems in a manner that I will understand in a lasting manner. The tests reflect the results of that critical thinking and how my thoughts and deriving methods of deduction have improved overall through written work. This course forced me to think hard and critically in understanding my strengths and weaknesses within the course; As a result, I have drastically improved in my comprehension of the fundamentals of thermodynamics theory and the applications. Before beginning this course, my understanding of thermodynamics was incomplete, however after taking this course, my theory was cemented and further expanded into how to apply it to my work. The course's content will help in my future career because the content will always apply; The content of the course is crucial in being succeeding as an engineer such that nothing will be neglected because no matter what the project some parts of it will always be necessary. Moreover, I have already applied and used aspects of the course material in everyday work to fix systems that I wouldn't have been able to before taking the course. The knowledge and experiences gained in this course are essential to being an engineer, the knowledge combined with the thought process creates the engineer mindset that will be invaluable for engineers' no matter what career path they pursue. If the course was taken again, I would advise myself to ask more questions in order to spur more critical thought on the content of the course. with that I would gradually understand more of the content from the course and perform better.

As an engineer, I have improved in both skill and mindset; acquiring both a tempered mind to tackle problems and approach problems methodically as well as the skill to utilize theory and write out problems efficiently. These improvements of mine were brought out as a result of an unyielding persistence to succeed as an engineer. My goal is to be an engineer and as such perseverance is crucial and that will not allow me to do any less than understand and apply all I have learned. My biggest accomplishment in the course were my results of my tests because these are the fruits of my labor. Specifically in the analysis, which demonstrates my understanding of the material, specifically the [Rankine cycle](https://drive.google.com/file/d/17PvV3yWbpp80iLd8AMoh40_T-stj-USF/view?usp=drive_link) and [Refrigeration cycle](https://drive.google.com/file/d/1KnE8UX3dHcd7pyMeJkJ9nOhcG-5ZTzsJ/view?usp=drive_link) tests. In the tests and homework assignments, I mastered the skills in reading the problem and understanding the states, processes and how to apply first law. While it may not seem like an important achievement, it is one of the core skills that requires mastery in order to be an engineer. In [Test 1](https://drive.google.com/file/d/1xKX0wE7uiD7S9lXIpfgtQkxKu1Qdsn9g/view?usp=drive_link) it is my application of first law, In the [2nd homework group](https://drive.google.com/file/d/1Jra_kbkReqlaqJ7lFfzok-ZOwv5hkQCI/view?usp=drive_link) I have demonstrated my understanding of mass fractions, and in the [3rd homework group](https://drive.google.com/file/d/1v7GOCJkgXGnyB-FsZ98ZL-ZTlRXGAV1M/view?usp=drive_link) my comprehension of the problems all illustrate my mastery in these skills. The work done throughout the course is not perfect, as such my work is messy and disorganized similar to that of placing thought on paper. The aforesaid is a major weakness of mine, because it shows my disorganized thought process in solving problems. This can be clearly seen in some of my [homework assignments](https://drive.google.com/file/d/1uwb2t2Btl8hLlQ6lgalhsQzqpvDdfoqh/view?usp=drive_link), and even aspects of my [tests](https://drive.google.com/file/d/1KnE8UX3dHcd7pyMeJkJ9nOhcG-5ZTzsJ/view?usp=drive_link) in the mistakes I have made. On the other hand, my strengths are also outlined with my weaknesses in that I will keep trying possible methods that will work as opposed to getting stuck in a cyclical problem completion process of attempting the wrong method the same way many times with no results.

Before taking the course, I was under the impression that it would be difficult far more difficult than an average core engineering class. After taking the course, I realized it was difficult, but it was manageable if I demonstrated and tried to understand the material taught. My assumptions changed slightly in the perception of what difficult meant. before taking the course, difficult implied that I would struggle to connect what I had learned in this class to others. After taking the course, though the course was difficult, it taught me how to connect all I have learned in many other courses, and made engineering more understandable and manageable overall. Taking the course has changed my perception of what the course would be about and into what it was training me to understand and do as an engineer. The small change completely flipped my assumption of understanding in engineering. The main reason for this is a result of Dr. Ayala’s thorough teaching style, his critique, and his atmosphere inside the classroom combined with my learning style that allowed me to reap the most benefits from the course alongside completely changing my perception of the class before and after taking it.