

MET 350

ePortfolio Reflection

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The work I have done has showcased the objectives of the class. When entering the class, I have prior knowledge of thermal applications, as I have previously taken thermodynamics and heat transfer. Learning thermal applications was a little difficult at first. When I first got into the class, it was quite overwhelming. I had to always remember to draw a P-v and T-s diagram before solving the problem, as required, and which formulas to use. Another was learning about the different types of cycles and what each P-v and T-s diagram looked like. Despite that, I feel I was able to overcome my troubles and obtained a decent grade in the class.

One of the first objectives in the class was to apply the first and second laws of thermodynamics to different systems. While applying the first and second laws of thermodynamics is more prominent in some cycles than others, I feel that we used them the most in chapter two. Ideally, when trying to find a mass flow rate fraction. One example of this was in homework 2.1, where problem 10-53 asked to find the mass flow rate fraction to determine the rate of heat transfer. It was necessary to use the first and second laws to find the answer.

<https://sites.wp.odu.edu/xnguy003met350/hw/>

Additionally, I believe my exams showcase the culmination of all of my work in thermal applications. Although my exam grades are average, I also include test reflections to show how much I have grown. For example, in exam three, it asks questions on the vapor-compression refrigeration cycle, the air-conditioning cycle, and a water-tower problem. Those problems are the most difficult. Although in exam three, I was allowed to work with a partner, which facilitated my growth by expanding my thinking and helping me relate our ideas to solve the problem.

In all of my exams, it covers all the necessary course objectives by testing all the chapter material.

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2. Answer the following questions, using links or excerpts (visual, audio, or written) from Your ePortfolio to illustrate your answers:

1) Where is your learning demonstrated in the course?

My learning in the course is best demonstrated by all three exams.

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2) What areas did you feel you were most successful in, or improved the most?

Some areas I feel were most successful were in chapter three, such as the vapor-compression refrigeration cycle, the air conditioning cycle, and the use of the psychrometric chart.

3) How do you see this course's content intersecting with your field or career?

I believe this course's content intersects with my current career. My current career involves different ship systems. Various thermal cycles are available on ships, such as the air conditioning cycle, to ensure the ship is maintained at a reasonable temperature.

4) Have you been able to apply concepts you have learned in the course to what you do at work or in other courses?

I have applied a small amount of knowledge to my current workplace. Since different ship engines run on diesel, it's important to know about the diesel cycle when trying to do maintenance on the engine.

5) How, when, where, and why you might use this information or skill in the future?

I might use thermal applications in my workplace. I will apply thermal applications work when a ship in drydock needs repair, and I can use my knowledge of different cycles to help do repairs.

6) Do you think what you learn is important for your professional career?

What I learned is important for my professional career. While learning about thermal applications and how to apply different cycles in different scenarios will be a small part of my career, it may prove vital in those current scenarios.

7) Where do you think you will be using everything you learned?

I will be using everything I learned in my workplace, which involves shipwork and maintenance of different engines.

8) If you were starting this class again, what advice would you give yourself to ensure that you had a successful semester?

If I were starting this class again, some advice I would give myself would be to ask more questions. This is because when I was in my class, I didn't ask many questions, and some concepts were a little confusing. Despite that, I still passed the class, but if I had asked more questions, I might have gotten a higher grade.

Also, answer the following questions:

1) After taking this class, in what ways have you improved as an engineer? What brought about those improvements?

I feel, in some ways, I have improved as an engineer in my knowledge of thermal work. These improvements were brought about by the coursework and exams that the class required. I also brought this on myself due to the sheer difficulty of the exams. The class also improved my work ethic. Originally, my work ethic wasn't as strong as before, but in tandem with other classes, I became more focused on my thermal applications work.

2) What was your biggest accomplishment in the course? Be specific with respect to your work and the topics you learned in the course.

My biggest accomplishment was exam 3 and the final project.

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I believe this because Chapter Three and its coursework were very difficult. Learning about air conditioning cycles and vapor compression was confusing at first because of the different formulas and approaches to solving the problem. Although I was partnered with a group to complete exam three, I was able to learn a lot during the exam and gain more knowledge.

3) What skills did you master in this course? How are they reflected in the assignments (HW, tests, etc)? Be specific.

I feel I have mastered the formulas for an isentropic process. This is because the formulas are mostly related to the ideal gas law. I feel it is best represented in all of the chapter one homework and the tests. The majority of the problems involve an isentropic process and require two values from each state to determine the temperature or pressure. For example, in homework 1.2, question 9-33, there are two isentropic processes in the cycle. I knew that to find the specific volume of one, I would use the ideal gas law. For the second isentropic process, I would have to use the formula. By simply substituting values into the formula, I obtained the correct answer, rather than using a more convoluted method to find the pressure at state two.

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4) What do you feel are your strengths and weaknesses? Explain while making specific references to your work.

My strengths in the class are the P-v and T-s diagrams and the psychrometric chart. In multiple homework assignments, I correctly drew and interpreted diagrams based on the given

information. The psychrometric chart is one of my strengths because once you learn how to find a value, everything else is relatively simple.

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A weakness of mine is finding the mass flow rate fraction when a pipe splits. This is most prevalent in chapter two, when an exam or homework problem asks to find the mass flow rate in one of the pipes to determine the work or heat transfer in that pipe. I get confused about the values and the first law equation when trying to determine which enthalpy state and which temperature states are involved.

5) How did you think about this course before you took it, and how do you think about it now that it is over? How many of your assumptions and understandings changed? Why?

Before taking this course, I thought it would be a continuation of heat transfer and thermodynamics. I thought the class would be relatively easy. Despite this, after taking the class, I found out that you could take thermodynamics first and take thermal applications in tandem with heat transfer. After taking the class, I feel that it is significantly more difficult than expected.