

I can confidently say that I have taken my hardest class yet in my 5-year college career and came out the other end with an A. I am a Mechanical Engineering student at Kennesaw State University and have enjoyed every bit of the challenge and character growth that has come along with it.

I desire to use my Mechanical Engineering degree in a field that is focused primarily on objects that tend not to move (like structures) because anything fluids based does not come naturally to me. So, as you can imagine, Heat Transfer from the get-go was a daunting and dreadful course. Additionally, my professor, Professor Li, was fairly serious about her class, if you know what I mean. And just to add in the cherry on top (because everyone needs toppings), I was taking 5 other very challenging courses that added up to a 17-credit hour semester! After receiving a 41 on my first exam, which happened to be before the add-drop date with no penalty, I had to make a serious decision.

I had never failed an engineering test that I studied for, so I immediately felt hopeless. With my intense workload on top of that, I felt justified in dropping the class and moving on with my life. If that decision would not have stalled my graduation by another year then I might have done just that, but I am pleased to say that I chose not to and am grateful for my decision.

First off, I want you to know that Professor Li is a wonderful professor. Anybody who wants you to take your endeavors seriously and who challenges you because they know that you are capable of great things is a friend indeed. With that said, the rest of my semester was a grind to the end. I could speak about what I had to do in each of my classes to receive a 4.0 at the end of it all and how much grace I was shown but, because Heat Transfer was by far the hardest course of them all, I believe that sharing about my experience there will be more than beneficial to anyone with an engineering degree and is struggling with their classes.

As I said previously, the semester was a grind. If I actually wanted to pass her class, then I had to put my best foot forward. During lectures, I did my best to make sure to take meaningful notes and ask questions whenever I felt lost. If the material and my notes did not make sense to me, then what was the point? My notes not only consisted of important concepts highlighted in her PowerPoint slides but also other details that she said and elaborated on in class that was not directly written in her slides (meaning going to every class or catching up on one that had to be missed is a must). And as far as lectures go, what was most helpful for me were the in-class examples and making sure I knew how to do them. It helped that the examples were based on concepts we just learned during lecture making my initial attempt at solving the problem a fairly straight forward one. I carefully read through the problem taking extra care to find what was being asked and what equation would be applicable. In some cases, many equations that would fit the bill, but the beauty of an in-class problem is that there are givens and assumptions which are actually breadcrumbs for which equation(s) you would want/need to use. This is usually the hardest part of most engineering problems but once you have your equations, the rest is just algebra! If I had taken care of these first few steps in my studies, then I could at least hope to be able to do her weekly homework assignments (yes, only hope).

What I did outside of class is what I believe lead to me receiving an A in her course (without the extra credit opportunities I did). At home, I made sure to fill in any gaps in my knowledge of the course material. Just because I understood the concept in class did not mean I truly knew the information (a concept Professor Li never failed to mention). I read the book, used her lecture PowerPoints and my own lecture notes, went to her office hours to ask questions, derived the

equations she asked us to derive, and restrained myself from simply looking up the answers to ensure that I could answer all of her homework questions. After I had solved a problem, I made sure to look at my answer and check to see if it made any sense. Sometimes this resulted in multiple attempts of the same problem and many hours of hard work but that is what I signed up for when I decided I wanted to be an engineer. I did not move on until I felt confident in my answer but this by no means meant my answers were always right. There were actually countless times when I thought I had aced the homework to only quickly find out that my statement was a false one after getting my grade back. But what made all my efforts worth it was the fact that I could now see where I went wrong in my studies and understanding allowing me to make the necessary changes to avoid making the same mistake on a similar problem (the definition of learning). But my studies did not stop here.

I made myself available to help other students knowing that the best way to learn the material is to teach it to someone else. If there was a disagreement on a concept, then that bred a healthy discussion which more often than not humbled me by revealing that I had an error in my understanding of the question and/or had made a silly mistake. For the exams and quizzes, I made detailed equation sheets of everything we had learned for that assessment and made sure I understood everything that I wrote down (understanding the equations is the crux of engineering). For the final, I sat down and went through every one of her lecture slides and did whatever I needed to answer my own questions. Because I had limited time to take the assessments, during the assessment I would read through a problem and if I felt confused or did not know where to start then I would move on to the next one. As I progressed through the assessment, I applied the same technique I used for in-class examples and homework: look for what is being asked, use the givens and assumptions as hints for which equation(s) to use, follow through with my process to the end, check to see if the answer was physically possible and moved forward accordingly. Moreover, I made sure to take some time to rest and reflect on any and everything that was not work-related each week. All my grades steadily improved.

As far as numbers go, I ended the semester with 66.63% without my extra credit points (an A was 57.39%) so you can imagine how hard her class was. What I learned from my experience was the value of perseverance, integrity, taking your time, and paying attention to details. The details of a concept are like the glue that holds together your knowledge of that subject. With that said, I believe that it is safe to say that, at the end of the day, grades are only numbers and letters, what really matters is what you get out of your journey.