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Final E Portfolio

The topic of academics is something that is often silently debated in the world we live in. On one hand, the benefits of a solid higher education foundation in one's life can open many doors; on the other hand, if not properly utilized, just its existence can inflate one's ego and create a false sense of security in the professional world. Unfortunately, the latter is becoming more and more common in the world today, which can be attributed to some failures of the higher education system resistance to change and evolution. In order to truly benefit from academics, a student must learn to understand concepts, methods, and skills that can't be studied or taught, skills that can only be learned from experience, and from trial by fire. In reference to a conversation, I had with Dr Ayala a few weeks before the time of this writing, the structure of the MET 330 class is best fitted to benefit the large majority of students, those with a GPA between 2.5 and 3.0, somewhere I fall into. After completing a class that is typically regarded as one of the hardest in engineering degrees, I can whole heartedly appreciate this approach to not only the course material, but also academic and professional work as a whole.

Throughout this class, there were many instances where the initial and face value of the work that laid ahead were very intimidating. The first test was one of those times. The advice to take problems as they come, chopped up into pieces is an indispensable piece of advice. I personally work fairly well under pressure, but, as everyone does, I do feel overwhelmed by

masses of work at times. One of the most important takeaways from this class is the idea that, no matter the concept or content of a problem, in order to have the best chance to solve it you need to keep moving forward. This means critically analyzing the problem before even stating an equation. What is it asking, what is the end goal, what else depends on this, what is the margin for acceptable error, what do you have to solve- These are all questions that you need to ask yourself, and more importantly understand the answer to before you even begin to attempt solving the problem you're faced with.

I was very happy to see this ideology applied in an academic sense, as I have never seen it anywhere else in my studies to this degree. In my professional work, I have attempted many large-scale projects where starting is often the hardest part. In these projects, I've applied these same concepts, which were critical in my completion of the work. My best example of this would be my SR project for graduation from the university. I started a fairly ambitious reverse engineering project 3 years ago, and through the same method of analysis and problem solving I was able to chop down the work into much more manageable pieces.

In addition to the problem-solving skills, I think the second most important skill honed and exercised in this class was that of communication. Through our project, we experienced a few setbacks that were communication based. One of the most important things to realize in life is that not everyone thinks the same way you do, and your ability to pitch an idea is often times more important than the idea itself. Given the fairly bureaucratic nature of the world we live in, its not an uncommon thing for the person in the position above you to not be as well versed in the core concepts of what you're working with. You need to be able to communicate effectively your designs, ideas, and concepts with the people who are critical in those entities being created.

One of the best examples I can think of in this is the leap between design to realty through machine shops. Effectively communicating the importance of design features to machinists, and the ability to design those features to engineers is an often-overlooked concept by academics. While ODU does offer DFM classes, it is very common for people with an engineering background with little or no manufacturing background to design features that are needlessly complicated, or downright impossible to manufacture or maintain. The communication between these 2 levels of development is critical to a successful project, and serves as a great example of communication hurdles that must be overcome.

While the aforementioned are concepts that are not really academic in nature, it is impossible to ignore the academic benefits of the course. While I believe the results of my tests speak for themselves, I do believe that I have grasped all these concepts very firmly throughout the semester. This can be best exemplified by the completion of my course project, where I had a very large hand in the concept and design of the apparatus itself.

With all these benefits from the course, there is still room for improvement on my behalf. One of the things I've struggled with in the past is the delegation of group work, mainly as some people might not take it as seriously as I do, and not complete their parts to the same degree as I would. Seeing as I have made a significant change to the way I tackle academics, and sometimes work I may not be as interested in, I try to remember that other people may be where I was, and that the fairest approach is to be patient with them, as people once were with me when I was younger and less mature. In order to be an effective project leader, as I intend to be in my professional life, you must realize peoples' strengths and weaknesses, and help hone their weaknesses to better themselves and the team. In this project, that was specifically applied by

allowing others to take aspects I would have rather done myself, and show them how to complete them as I would if I were to do them on my own.

After all is said and done, I can confidently say I gained much more from this class than I expected. I signed up for it as a requirement for graduation, but I can honestly say I appreciate this teaching style more than any other academic course I have taken here at ODU. While the academics were important to me, I believe the 2 other concepts I touched on previously outweigh them; as these concepts are not really taught in school. To fully take advantage of higher education, one often needs more than higher education can offer- one needs to couple real world experience with academics. The blend of these 2 entities in this course truly impacted my professional career, and for that I deeply thank Dr Ayala from the bottom of my heart; without the structure of this class being almost tailor made for students like myself, students that do not get straight As but aim to gain the most from their academic studies, I would not be leaving this course in the position I am now, far more confident to enter the professional world after graduation.