Mechatronics Essay:

This year in class we studied a wide variety of topics ranging from important physics concepts to the theory behind and the construction of robots. Each topic will have a significant impact on my future schooling and on my success in general. Each topic will lend itself to other classes, and thus make future learning simpler and faster. Each topic broadens my understanding of the world and the way things work. And finally, each topic, and the application of such knowledge, will allow me to better prepare myself for challenging and diverse situations.

For example, our study of physics is already having a noteworthy effect on my success in school. My pre-calculus and chemistry classes in particular are using concepts which I have already gained an understanding of in this class. This makes it much easier for me to learn in these other challenging courses. But, the applicability of these lessons does not end there. No, the basic physics theories that I have learned here will carry over into calculus, physics, and other classes that I will take in college. Furthermore, this knowledge of the way the world works has a much deeper significance than it will make future classes easier. I firmly believe that the purpose of taking such classes as calculus, physics, chemistry, and, yes, engineering, is more than just “oh, well, it will look good for college”. The true reason one should apply themselves to learning these difficult and seemingly useless lessons is so that one can change the way they see the world. I take those classes in order to better understand what makes this world work. Now, do I need to remember all the formulas and details? No, I don’t believe so. What I can take away from a physics lesson rather, is the basic understanding of the interconnectedness of everything. I can take away the knowledge of how so many different things come

together and make things *go*. Or stop, or speed up, or fall, or fly. And this broader understanding will change the way that I *see*.

Another important piece of this class was spent on the hot air balloon project. It is very clear exactly how this specific task affected me. It helped me to learn how to design—an important ability in any field, I think. The capability to make something out of knowledge is essential. And this is what we did with the balloon project. We took our knowledge of physics, and of weather, and of balloons, and of our general limitations and we applied it all to make something fly. This is a very useful skill—the ability to apply one's understanding in real-world ways. Another benefit of the time we spent on this project was our growth as a team. It is amazing that we took four completely different people—with different ideas, thought patterns, work ethics, skills—and made them into something different. We took Krista, Justin, Jessica, and Taylor and made Ungu Bunga. And Ungu Bunga was able to make a balloon fly! Our ability to work together and combine all our different elements is an essential skill that we will take into future classes, jobs, friendships, and marriages.

We also completed a unit on alternative energy. Although shorter than the others, this was an important addition into the curriculum. For one thing, we learned what the future holds. Because let's face it, no matter what your stance is on global warming or any of it, we are on the cusp of change in our world. My generation is watching (and hopefully creating) a new type of living—one in which people are environmentally conscious. And so the benefit of having studied the real applications of this new earth-friendly knowledge is that when the change comes we will not be completely lost. I will

be able to knowledgably analyze and understand what exactly is going on as the way things are done takes a new turn.

Last but not least, we studies and applied knowledge of electronics and mechanics in our robotics unit. This was by far my favorite part of the class. Despite the challenges that we faced (and there were many) my partner and I came out with one of the more successfully built robots and a much deeper understanding of the new place technology has come to and where it is going. How could I describe to you the ways that I feel I have benefited from this knowledge? Well first off, I now have more confidence in the area of electronics. Before, I felt as though I was completely unable t o even think logically when it came to this area of science, because I was so unversed. Now, my ability to just simply understand and know has risen tremendously and I am extremely happy about that. But the significance of the robotics unit is even more than that. It is important because this was a topic that I previously knew nothing about. How often is it that we are able to learn about something that we had not been in the least bit prepared for in earlier classes? Our schooling is structured so that everything is a gradual build up, step by step you learn something, year after year you slowly gain an understanding. But this! All of a sudden, I was able to learn something new! And I found that I could handle that. I did not need to be cushioned by five years of prior learning that slowly led up to the point of real electronics and mechanics understanding and application. I could jump right into a new topic and thrive. And this boosted my confidence tremendously.

So all in all, how would I summarize this year (or 2/3 of a year) in mechatronics? Intense, difficult, challenging, stressful…and in the end, beneficial and fun. Would I repeat the year? Absolutely not. But will I take the next level class? Absolutely for sure.

My time in the Endeavour program has never once been a waste, never once left me feeling as though the class was useless. I doubt that I could say this about any other class that I have taken. This then, is the true mark of a class worth taking. And I will gladly do it again.