Results

At the beginning of this project we needed to test all of the components we had and we started off using this:



This is a power supply purchased from BK Precision, this is a standard power supply used in almost every lab in which a power supply is needed. This was used in the beginning to figure out how much voltage and current our devices could handle. While there was a current and voltage max that was assigned to them. We changed our potential power supply to



Average Power Consumption Estimation

|  |  |  |
| --- | --- | --- |
|  | TECs | Fans |
| Voltage Sent | 14.7V | 12V |
| Duty Cycle | 50% | 100% |
| Average Voltage Consumed | 7.35V | 12V |
| Average Current | 2.0A | 0.7A |
| Multiplied by 2 for each component | 4.0A | 1.4A |

Maximum mAh used in one hour = 4.0A + 1.4A = 5.4A Equation to determine how long this battery will last:c5400mAh / 60mins = 4400mAh / battery life Battery Life = 48.88mins.”

However at the end of the project due to time constraints we were not able to actually buy the battery and we went back to our original power supply. We also produced a working code and were able to run it on a student’s computer, however again due to time constraints the code was never successfully implemented. Our final product was a wrist band that was able to hold one TEC and one fan. This was far from our original goal; however we did create something that was tangible. This project was not a mere simple science project and took hours of dedicated work from numerous amount of people. I have come to the conclusion that this class, Engineering by Design, is not merely about the application of skills learned in class or actually finalizing a working product. I can confidently speak for the entire group when we say that we learned that this class allowed for us to think outside of the normal engineering box. This class encompassed a test of not only mental capacity but mental strength. It tested our ability to learn how to work through and around problems, and also how to compromise. The ability to work with others in the work place is hard to teach in the class room. However this class did a wonderful job at doing a simulation of how working with others may be like. Looking at the class more like a learning experience then an actually class then shows many results. The results could be measured in many things such as a responsibility, a new found importance for respect, and friendship. The growth that took place in terms of being an adult was immeasurable for some. The ability to sit down and design something together and also get a result is wonderful, especially because of the lack of direction originally provided. This project was ours. All of the project failures and success is ours. Much like the real world there was no safety net to catch us if we didn’t finish we didn’t finish. If we ran into material/ personal/ethical/monetary problem there was no one to fix it but ourselves and the group as a whole. This class provided a good environment for students to grow and I feel these were the desired results from the class. In conclusion we started at point A and got to point B however what the points are in this case don’t matter. The fact that we were able to get to two different points with something designed and in hand and that we got there as a group with as many difficulties as we faced shows a strong development in every individual in the class.