Biology in and within itself is the study of life. Longwood did an excellent job of discussing and addressing all of the different entities that biology involves. Coming from a community college, a had a good foundation for the upper level biology classes that I face while at Longwood. Longwood uses a pillar system that focuses on organismal, cell and molecular, and ecology and evolution. I chose to take Anatomy and Physiology II for my organismal pillar. I learned a variety of biological concepts, like how the body works, the functions of the immune system, etc. For the cell and molecular pillar, I chose to take genetics. This class was very involved in the functions of genetic diseases and central dogma. For the ecology and evolution pillar, I chose Evolution. In this class, we learned about how different species evolved over time (including the origin of humans), the mechanisms of evolution, and various laws that govern the study of biology.

In Anatomy and Physiology II, we dissected a fetal pig, to help us understand where all of the organs are and their primary functions. We used a pig because most mammals have relatively similar anatomy and could be related to human anatomy. Despite the awful smell of formaldehyde, I thoroughly enjoyed lab. Our professor discussed how everything works. He talked about everything from all of the organs to the brain to the different regions of the brain and even the primary blood vessels. This related to biology because all of those things have a specific purpose in creating and maintaining life. It also integrates all other sciences including physics and chemistry.

In genetics, I worked on a group project that looked at genetically engineering yeast strains that would yield a better aroma in beer and would undergo a more vigorous fermentation process. My group and I chose to work on ELO3 and FAS2. We learned how to perform BLAST analyses, PCR, gel electrophoresis, transformation, how to perform epifluorescence, and determine how our specific protein interacts in a yeast cell (viability). This project allowed me to understand micro-level biological concepts and greatly improved my confidence when working in a lab.

In Evolution, I was any topic that related to evolution and write a research review on it. I chose to study how the human brain has evolved, this includes the positives and negatives, as well as the specific niche we were supposed to fulfil. This topic allowed me to understand how evolution changes over time and how important it is that all species evolve to reduce competition. I found that having a larger brain leads to a higher thinking capacity, that allow us to have special cognitive abilities, like the ability to craft tools and specialized foraging. This is great but it takes time to develop such a sophisticated brain. It takes humans 14.5 years to develop our enormous brains compared to the chimpanzees 9.3 years. Other drawbacks to this enlargement include an increased risk of developing neuropsychiatric disorders.

Each of these classes have allowed me to understand different aspects of the major principles of biology by looking at all concepts of organismal, cell and molecular, and ecology and evolution from a various perspectives. I feel that I have been given a good foundation on the major aspects of biology.