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CPRE 494

General Education Reflection

During my time at Iowa State University I was given the opportunity to grow my knowledge outside of the basic engineering courses by taking general electives. Although these courses were not directly related to engineering, I quickly realized how problems and designs within these courses could be applied to growing my basic problem solving skills.

One of the general education courses I took was ARCH 321: History of the American City and ARCH 322: History and Theory of Modern Architecture. These courses taught me about different design methods and theories that architecture has been embedded with throughout recent history. These courses aided my understanding of problem solving in a non-engineering context as they taught me the importance of design centered around the user. One of the more ambitious aspects of modern architecture was the theory that good design could be used as a tool to solve many of life's issues. Architects, under the ideology of modern architecture, believed that they could make a positive impact on society through efficient and well designed spaces. These spaces include areas for public gathering such as a city plaza, public theater, or personal dwellings. These designs took societal criticisms and attempted to correct them through structure. This course helped me realize design as a powerful tool that should have a primary focus in the betterment of the user's interaction. Although it is one thing to come up with solutions to problems, it is almost equally important that the solution contains aspects that make it easy and understandable for a target audience to interact with.

Another aspect of problem solving these courses taught me about was the aspect of being creative when it comes to formulating solutions to problems. Because of the historical context of these courses, I had learned about the many different eras architecture had gone through, birthed by new building technologies and advancements in materials sciences. Each of these eras had to rely on sciences that were present at that time. This created restrictions to how architects could approach designing structures. If the science was not there, architects were forced to be creative to formulate solutions to complete more ambitious projects. This aspect is important in relation to engineering as engineering faces many of the same restrictions when it comes to the sciences supporting it. Solutions to problems rely on science, if the science is not there yet engineers are forced to be creative in the same way. Many of the problems engineers face come with a set of restrictions, albeit economic, logistical, or simply restrictions on materials like the architectural world faced. This introduces a sense of creativity when it comes to solving problems.

Another course that I took was ENV SCI 120: Introduction to renewable resources. This course showed me real world problem solving when it comes to creating energy, resource

logistics, and how these processes impact the environment. This course helped me understand the real world, positive ramifications that problem solving can have on fixing large scale issues like climate change and negative factors in the environment. This realization helped me understand the importance of the issues that engineers can face.

The opportunity to engage in these general education courses was invaluable to my academic career at Iowa State University. Through these classes I was able to practice and learn aspects of problem solving without technicalities existing in my core engineering courses. These experiences working within new groups and meeting new professors helped round out skills that are important for an engineer to have.