CPRE 494 General Education Reflection

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In my experience at Iowa State University, I have taken a handful of general education courses. Of which, I will focus this document on the following economics courses: ECON 101 (Principles of Microeconomics), ECON 320 (Labor Economics), and ECON 321 (Economics of Discrimination). The knowledge and principles gained from these courses is relevant to engineers in the following ways:

- **ECON 101: Optimization & Decision trade-offs**
- **ECON 320: Workforce labor planning & Automation**
- **ECON 321: Inclusive design, ethics, and bias mitigation**

In ECON 101, I obtained a great understanding of optimizing for pi. For example, given X' and Y' constraints, find the x and y to make pi as big as possible. When it comes to problem solving in engineering – in my experience – this is extremely common. Engineers are often faced with constraints and preferences while aiming for a certain goal. ECON 101 gave me great tools to model and solve optimization problems.

In ECON 320, I had the opportunity to learn about labor markets – studying trends and laws in labor planning and labor force tendencies. I work for a large American Agricultural Machinery Manufacturer. As macroeconomic factors influence the bottom line at my employer, I have a front row seat to observe how assembly-line planners and manufacturing engineers respond. It seems that replacing human capital for robotic automation is a constant consideration. I am certain that principles taught in ECON 320 are considered, if not applied, to get to the outcome of many of these decisions that leadership makes.

In ECON 321, I had the opportunity to learn about how policies can influence certain people groups differently. This opened my mind to consider how the designs that engineers produce might influence certain people differently. With this consideration, I believe that it leads the way to increase inclusive designs and reduce bias.

In summary, the economics general education courses that I took are directly applicable to understanding the world around me and innovation environment in the world of engineering. Principles learned in these courses have helped me – and will continue to help me – be a better engineer.