Code Red

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Career Readiness Semester Project

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Career Readiness for an Electrical Engineer

# There are many types of engineers in the world. Some engineers work on physics, and aerodynamics, such as an astrophysicist. Others, however, choose to work on the manufacturing side of things, such as a chemical engineer.

# WHAT IS AN ELECTRICAL ENGINEER?

An electrical engineer is an important part of functioning society. They will design and develop technology that can change the world, such as smartphones,and radars. They have contributed to the modernization of diagnostic tools, along with the improvement of prosthetic devices.

*How do electrical engineers use the EDP?*

There are seven steps to the EDP, starting with identifying the problem. An electrical engineer has to figure out what technological issues there are in the world. For example, prosthetics used to be made of wood, and other extremely stiff and other non-preservative materials, such as iron, which can rust. Prosthetics were extremely unuseful, and many times would not be effective. They realized however, that there was a way that they could improve, and that so finished the first step. The second step in the EDP is to ask questions. Electrical engineers had to figure out what the problems with the old prosthetics were. The fourth step in the EDP is planning. An electrical engineer has to take extremely careful steps in planning, as many times a project for them is extremely expensive, and one misstep could be extremely expensive. They must pick out the right materials, the right angles and everything else. For a prosthetic however, the main thing that was to be accomplished was for them to be more functional. Wiring and different, stronger, yet light materials would accomplish that. Eventually, through careful planning, the first blueprint of the Luke arm, named after (fun fact) Luke Skywalker, was made.9

HOW DOES A PROFESSIONALS DESIGN PROCESS COMPARES TO THE TEAMS

Electrical engineers have multiple steps that are similar to the EDP that we use. One similarity is that we both assess the problem and start to brainstorm ideas to fix it. When we brainstorm we try to find what we could design for an issue with our robot or design ways to obtain more discs. Electrical engineers find something wrong in the world and come up with a solution. Another similarity is that we both upgrade our old designs to problems to better fit the problem. While we have some similarities there are some differences like we don’t have to worry as much about messing up a calculation because of how we can undo them easily. Electrical engineers have to worry heavily about possible messing up.

HOW DOES VEX IQ PREPARE US FOR A FUTURE CAREER

Being in a VEX team helps to learn many different skills for our future careers, especially in electrical engineering. One of the main skills you need to be an electrical engineer is technological knowledge. Coding and building are main aspects of robotics that fill this criteria. For example, while building our robot we can learn about different pieces, what they do, and how they can combine with other pieces to build a technological object. Another skill that is critical for electrical engineers to have is complex problem solving skills. Throughout the process of building we must evolve in this aspect a lot. For example if we have finished building our robot and realize the gear-ratio is wrong on the base of the wheels, if it comes to it we must detach the whole base of the robot just to change the gear-ratio. In addition to that, electrical engineers must also have interpersonal skills. Being in a VEX IQ team helps build those skills as it drives us to speak to our teammates daily, be able to communicate respectfully to each other, and be able to agree on one and/or certain ideas.

