Design Engineer
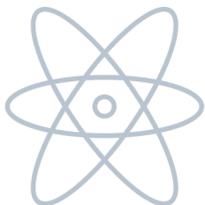
OVERVIEW

Design Engineers are responsible for creating solutions to new problems that advance our progress to a better life. They are the cutting-edge engineers working in oil and gas companies, refineries, aerospace, automotive industries, construction and building, medical engineering, transportation and highways, and water treatment. Design Engineers apply their innovations to develop prototypes to solve big and small problems using their knowledge of fluid dynamics, structural calculations, and mathematics with engineering variables. They even design solutions in Virtual Reality (VR) and Augmented Reality, helping them to innovate faster than ever before.

EVALUATE YOUR INTEREST
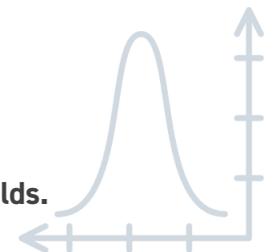
☐ I like the idea of working in a variety of STEM fields.

☐ I enjoy solving innovative problems that require me to build and test solutions.

☐ I like rebuilding and fixing things to improve their functionality.

☐ I like the idea of being on-site and hands-on with projects, seeing my solutions work.

☐ I enjoy listening to the ideas of others and analyzing the best possible solution.

CAREER CONNECTION

How does this career affect me?	What are some other similar careers?	How does this career affect the world?
The work done by Design Engineers is key to much of our global industry. Your home is heated by the fuel produced by the systems they maintain. The cars and buses you ride have safety systems Design Engineers have created. The lives of your loved ones may have been prolonged by the medical devices design engineers have helped innovate. The lights that you turn on at night are powered by the electric generators Design Engineers continuously make more efficient. Design Engineers make sure our current systems keep running, and our future systems make our lives even better.	**Staff Analog and Digital Hardware Design Engineers** fundamentally change the way people communicate, the way they collaborate, the way they watch TV, and the way they explore the universe through the internet. They are focused on a world of unlimited bandwidth to create the content of tomorrow. **Project Specialist Engineers/Design and Integration,** direct technical and programmatic tasking. They coordinate customer interactions at program and professional reviews. They also participate in the Technical Data Package (TDP) process for new construction, modernization, and back fit. **Project Engineer Highway Designers** work on significant transportation projects of varying size. They work with teams on transportation planning, design, and construction in connection with a wide range of multidisciplinary projects involving various aspects of highway/roadway/drainage design, safety studies, transit design, civil site design, and design reviews.	Without Design Engineers, our machines would stop working. The things they have created can be found in every manufacturing and energy-producing industry. New parts must be created to integrate new technology into old technology. Design Engineers are always looking for ways to improve our current technology without always replacing it. The project may be something as simple as putting in a more efficient pump to the complex process of automating an oil platform using the IoT (Internet of things) and Artificial Intelligence. All of this is done with an eye on safety. Design Engineers must not only solve the problem but must also find a solution that will keep people and the planet safe.

TAKE ACTION

☐ Investigate your home or school for ways of incorporating an IoT device. Then, consider how the IoT could gather data or automate a task to improve the overall effectiveness of the system. Once you have a plan, share it with your family or school!

☐ Contact a local solar company by phone or email. Prepare a list of questions beforehand and investigate what this company is doing to design ways of connecting the new solar technology to older electric systems. If you know a worthy cause that this company could consider contributing to, be sure to recommend it!

☐ Put your design skills to the test as you design a product or component to solve a problem that impacts your community. Follow the engineering design process as you identify the need, research the issue, brainstorm ideas, develop a solution, prototype, test, and evaluate your design, and then improve upon it!