

Electronics Engineering Technician

Job Description

-Electronics engineering technicians work with electronic circuit boards and are involved with the design and layout of the boards. They work with computer software for designing and also work hands on with tiny parts of the electronic equipment to ensure everything is in the correct place on the boards.

Education

-Associate's degree in electronic engineering technology

-Background knowledge in computer circuit boards, processors, chips, electronic equipment, and computer hardware and software is necessary.

Approximate Salary Range

-The approximate salary range for an electronics engineering technician is \$50,000-100,000.

What can I do now to prepare?

-Learn about how computers and electronics work and even how to solder (with supervision)

-Understand as much math and physics as you can to prepare for college courses.

-Look into associate degree programs in electronic engineering.

Career Spotlight



Stacey Whaley: Electronics Engineering Master Technician

The countless electronic systems at the Spallation Neutron source are controlled by computer circuit boards that include thousands of tiny parts that are connected in order for the electronics to work. Electronics engineering technicians are responsible for creating and maintaining these systems and computer boards. One main job of the technicians is board layout and design. Engineers provide the technicians with what they need an electronic system to do, and they design the board for the system using a computer program. Another part of the job is working hands on to fix any issues within the tiny components of the boards. This could require tedious maneuvering under a microscope and soldering different parts of the boards. Stacey Whaley is the master technician and works with a team of electronics technicians to design and maintain the electronic systems in the accelerator. Stacey has always been interested in STEM fields. She pursued a bachelor's degree in electronic engineering and also received her master's degree. Her education led her to multiple jobs in the electronics industry that were steppingstones to her position now as a master technician. In addition to knowledge about how electronics and computer boards function, Stacey emphasizes how important safety is in her job. Electronics can be dangerous, so it is crucial to pay attention to surroundings and follow all safety procedures. Stacey also encourages people that want to pursue this field to learn to use basic tools like wrenches and screwdrivers as well as more advanced tools like soldering irons.

Interview Questions

“The goal of this interview is to write a description of your job in middle school terms. We will use this description and others to explain various jobs to students in order to obtain more interest in jobs across the SNS.

Would you mind if I record audio for the interview?”

- What is your job title?

Master Technician (electronics)

- Describe your job as if you were talking to a middle schooler.

My job is mainly board layout and design with electronics. I design the layout of the electronics boards similar to what cell phones run off that run the electronics used in the accelerator. (RF- radio frequency) One example of a board that I work on is a high-power protection module system- the board shuts down the beam if any systems are signaling that they are not working properly.

- Did you have any role in any of the equipment (design/operation/maintaining/ control) in the injection region shown in the Lego model? Can you explain that role?

We work with the accelerator section.

- When did you become interested in perusing a job in this field?

I was interested in STEM fields in high school. Later in life I was diagnosed with cancer and lost my leg. I have a prosthetic and I really was interested in how it works. That was when I really became interested in electronics.

- What does a typical workday look like for you?

If something is broken, that is priority until we can fix it. We put everything else to the side to see if there is a board on our end that needs to be fixed. Aside from troubleshooting issues, mostly I do electronic board layout and design. Engineers bring a schematic to me and tell me what it needs to do, and I then design the layout if the electronic board. Its like a big jigsaw puzzle to put together.

- How long have you been doing this job?

17 years

- What qualifications or education are necessary in order to begin a career in this field?

Bachelors in electronics engineering

Masters wasn't completely necessary but I do have my masters

- What can a middle school/high school student do now to prepare for a career in your field?

Learn how technology and electronics work. Possibly learn how to solder (with supervision).
Focus on math fundamentals and science courses.

- What aspects of your job do you enjoy the most?

Board layout and design.

- What tools or technology do you use most in your job?

A computer software to 3d model the boards. Many of them have many layers and rh software lets you design each layer and see them all together.

- What skills (besides the background knowledge) do you think are essential in your job in order to be successful?

Safety and being aware of your surroundings. Using tools like screwdrivers and wrenches

- Why is your job important to the Spallation Neutron Source?

It keeps the beam running. IF we didn't have RF, the particles wouldn't move, they would just sit there.

"Could you email us a picture and a brief description of your job in your own words"