PLTW Engineering

10-12/Career Exploration – Electrical and Electronics Engineering Technicians

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10-12/DE

Lesson: **5/15/2020**

Objective/Learning Target: Students will be able to explain the career path of an electrical and electronics engineering technician.

What do EE technicians do?

Electrical and electronics engineering technicians help electrical and electronics engineers design and develop computers, communications equipment, medical monitoring devices, navigational equipment, and other electrical and electronic equipment.

They often work in product evaluation and testing, and use measuring and diagnostic devices to adjust, test, and repair equipment. They are also involved in the manufacture and deployment of equipment for automation.

Typical duties for EE technicians

Electrical engineering technicians install and maintain electrical control systems and equipment, and modify electrical prototypes, parts, and assemblies to correct problems.

When testing systems, they set up equipment and evaluate the performance of developmental parts, assemblies, or systems under simulated conditions. They then analyze test information to resolve design-related problems.

Typical duties for EE technicians

Electronics engineering technicians identify and resolve equipment malfunctions and then work with manufacturers to get replacement parts. They also calibrate and perform preventive maintenance on equipment and systems.

These technicians often need to read blueprints, schematic drawings, and engineering instructions for assembling electronic units. They also write reports and record data on testing techniques, laboratory equipment, and specifications.

Typical duties for EE technicians

- Put together electrical and electronic systems and prototypes
- Build, calibrate, and repair electrical instruments or testing equipment
- Visit construction sites to observe conditions affecting design
- Identify solutions to technical design problems that arise during the construction of electrical systems
- Inspect designs for quality control, report findings, and make recommendations
- Draw diagrams and write specifications to clarify design details of experimental electronics units

Work environment and work schedules

Electrical and electronics engineering technicians work closely with electrical and electronics engineers. For this reason, teamwork is an important part of the job. They work in offices, laboratories, and factories because their job tasks involve both engineering theory and assembly-line production.

Electrical and electronics engineering technicians may be exposed to hazards from equipment or toxic materials, but incidents are rare if proper procedures are followed.

Work environment and work schedules

Electrical and electronics engineering technicians may work in day or night shifts, depending on production schedules.

In the federal government, their schedules tend to follow a standard workweek.

How to become an EE technician

Electrical and electronics engineering technicians typically need an associate's degree.

Programs for electrical and electronics engineering technicians usually lead to an associate's degree in electrical or electronics engineering technology.

Vocational-technical schools include postsecondary institutions that serve local students and emphasize training needed by local employers.

How to become an EE technician

Community colleges offer programs similar to those in technical institutes but include more theory-based and liberal arts coursework.

Some of these colleges allow students to concentrate in computer electronics, industrial electronics, or communications electronics.

Important qualities for an EE technician

Logical-thinking skills

Electrical and electronics engineering technicians must isolate and then identify problems for the engineering staff to work on. They need good reasoning skills to identify and fix problems. Technicians must also follow a logical sequence or specific set of rules to carry out electrical engineers' designs, inspect designs for quality control, and put together prototypes.

Important qualities for an EE technician

Math skills
Electrical and electronics engineering technicians use math for analysis, design, and troubleshooting in their work.

Mechanical skills
Electronics engineering technicians in particular must use hand tools and soldering irons on small circuitry and electronic parts to create detailed electronic components by hand.

Important qualities for an EE technician

Observational skills
Electrical engineering technicians sometimes visit construction sites to make sure that electrical engineers' designs are being carried out correctly. They are responsible for evaluating projects onsite and reporting problems to engineers.

Writing skills. These technicians must write reports about onsite construction, the results of testing, or problems they find when carrying out designs. Their writing must be clear.

How much does an EE technician get paid

The median annual wage for electrical and electronics engineering technicians was $65,260 in May 2019.

The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less.

The lowest 10 percent earned less than $39,190, and the highest 10 percent earned more than $96,690.

Quiz yourself

Name 1 difference between an electrical engineering technician and an electronics engineering technician.

List 3 typical duties for an EE technician.

What is the minimum education required to become an EE technician?

What do you think is the most important quality for and EE technician to have? Why?

Helpful links

Differences between engineers and engineering technicians

What do electronics engineering technicians do?

What do electrical engineering technicians do?