



PLTW Engineering

Career Explorations:

Electro-mechanical Technicians

April 17, 2020



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Objective/Learning Target:

Students will explore Electro-mechanical Technicians as a
career.



What do Electro-mechanical Technicians do?

Electro-mechanical technicians combine knowledge of mechanical technology with knowledge of electrical and electronic circuits. They operate, test, and maintain unmanned, automated, robotic, or electromechanical equipment.



Typical tasks / duties

Electro-mechanical technicians typically do the following:

- Read blueprints, schematics, and diagrams to determine the method and sequence of assembly of a part, machine, or piece of equipment
- Verify dimensions of parts, using precision measuring instruments, to ensure that specifications are met
- Operate metalworking machines to make housings, fittings, and fixtures
- Inspect parts for surface defects
- Repair and calibrate hydraulic and pneumatic assemblies
- Test the performance of electro-mechanical assemblies, using test instruments
- Install electronic parts and hardware, using soldering equipment and hand tools
- Operate, test, or maintain robotic equipment
- Analyze and record test results, and prepare written documentation



Work Environment

Electro-mechanical technicians work closely with electrical engineers and mechanical engineers. They work in many industrial environments, including energy, plastics, computer and communications equipment manufacturing, and aerospace.

They often work both at production sites and in offices. Because their job involves manual work with many machines and types of equipment, electro-mechanical technicians are sometimes exposed to hazards from equipment or toxic materials. However, incidents are rare as long as they follow proper safety procedures.

Work Schedules

Electro-mechanical technicians often work for large companies in manufacturing or for engineering firms. Like others at these firms, these technicians tend to work regular shifts. However, sometimes they must work additional hours to make repairs so that manufacturing operations can continue.



How to become an Electro-mechanical technician

Education

Associate's degree programs and postsecondary certificates for electro-mechanical technicians are offered at vocational-technical schools and community colleges. Vocational-technical schools include postsecondary public institutions that serve local students and emphasize teaching the skills needed by local employers. Community colleges offer programs similar to those in technical institutes, but they may include more theory-based and liberal arts coursework.

Licenses, Certifications, and Registrations

Electro-mechanical technicians can gain certification as a way to demonstrate professional competence. The International Society of Automation offers certification as a Certified Control Systems Technician. This requires, at a minimum, 5 years of experience on the job, or 3 years of work experience if the technician has completed 2 years of postsecondary education.

The National Institute for Certification in Engineering Technologies (NICET) offers certification in electrical power testing, industrial instrumentation, and other specialties.



How to become an Electro-mechanical technician

Important Qualities

Detail oriented. Electro-mechanical technicians must make and keep the precise, accurate measurements that mechanical engineers need.

Dexterity. Electro-mechanical technicians must use hand tools and soldering irons on small circuitry and electronic parts to create detailed electronic components by hand.

Interpersonal skills. Electro-mechanical technicians must take instruction and offer advice when needed. In addition, they often need to coordinate their work with that of others.

Logical-thinking skills. To carry out engineers' designs, inspect designs for quality control, and assemble prototypes, electro-mechanical technicians must read instructions and follow a logical sequence or a specific set of rules.

Math skills. Electro-mechanical technicians use math for analysis, design, and troubleshooting in their work.

Mechanical skills. Electro-mechanical technicians apply the theory and instructions of engineers by creating or building new components for industrial machinery or equipment. They must be adept at operating machinery, including drill presses, grinders, and engine lathes.

Writing skills. Electro-mechanical technicians must write reports that cover onsite construction, the results of testing, or problems they find when carrying out designs. Their writing must be clear and well organized so that the engineers they work with can understand the reports.



Salary for Electro-mechanical technicians

The median annual wage for electro-mechanical technicians was \$57,790 in May 2018. 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 \$37,090, and the highest 10 percent earned more than \$88,860.



Helpful Links

[Onet Job Summary Report](#)

[Electrical Power Testing NICET Certifications](#)