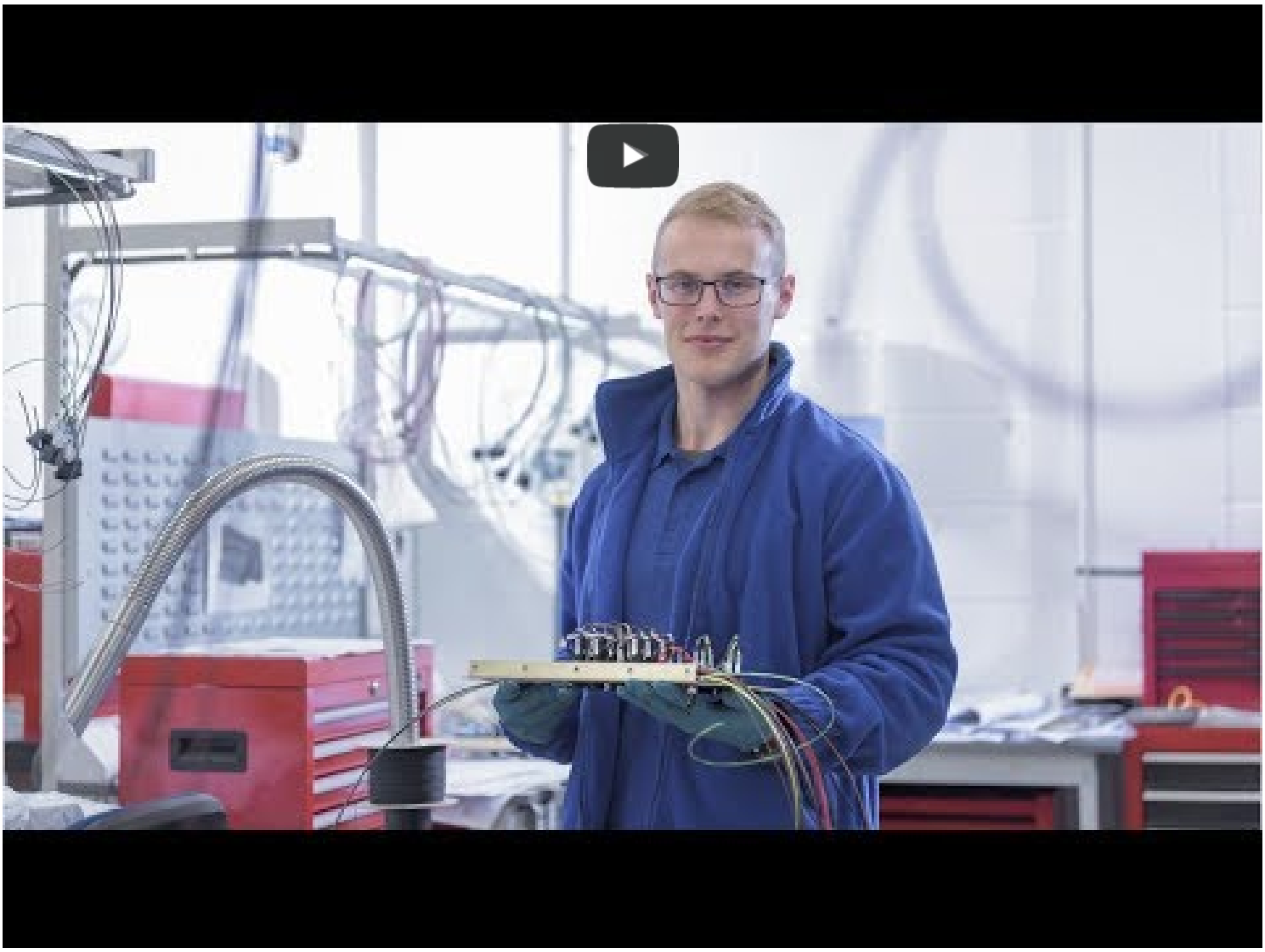
Electrical and Electronic Engineering Technologists and Technicians

Summary



Job Outlook

Employment of electrical and electronic engineering technologists and technicians is projected to grow 1 percent from 2024 to 2034, slower than the average for all occupations.

Despite limited employment growth, about 8,400 openings for electrical and electronic engineering technologists and technicians are projected each year, on average, over the decade. Most of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

State & Area Data

Explore resources for employment and wages by state and area for electrical and electronic engineering technologists and technicians.

Similar Occupations

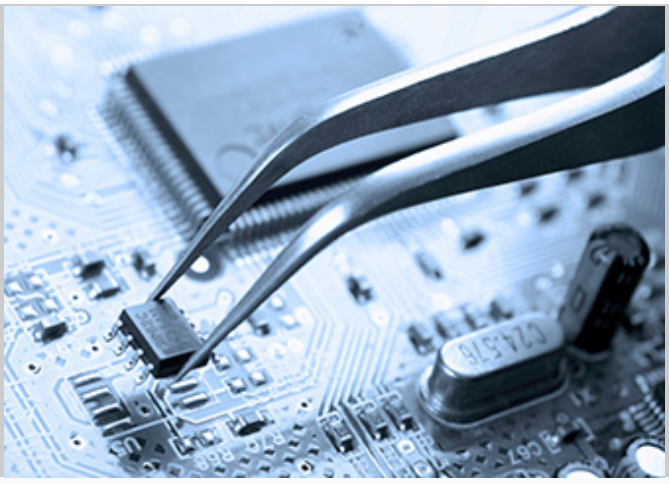
Compare the job duties, education, job growth, and pay of electrical and electronic engineering technologists and technicians with similar occupations.

More Information, Including Links to O*NET

Learn more about electrical and electronic engineering technologists and technicians by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

What They Do ->

What Electrical and Electronic Engineering Technologists and Technicians Do



Electrical and electronic engineering technologists and technicians help engineers design and develop computers and other electrical and electronic equipment.

Electrical and electronic engineering technologists and technicians help electrical and electronics engineers plan and develop communications equipment, computers, medical monitoring devices, or other equipment that is powered by other electricity or electric current. They often work in product evaluation and testing, using measuring and diagnostic devices to test, adjust, and repair equipment. They are also involved in assembling equipment for automation.

Duties

Electrical engineering technologists and technicians typically do the following:

- Assemble electrical and electronic systems and prototypes
- Build, calibrate, and repair electrical instruments or testing equipment
- Visit sites where systems are made to observe conditions affecting design
- Identify solutions to technical design problems that arise in making electrical systems
- Inspect designs for quality control, report findings, and recommend changes, if necessary
- Draw diagrams and write specifications about design details of experimental electronics units

Electrical engineering technologists and technicians install and maintain electrical control systems and equipment and adjust electrical prototypes, parts, and assemblies to correct problems. When testing systems, they set up equipment and evaluate how the parts, assemblies, or systems perform under simulated conditions. They also analyze test information to resolve design problems.

Electronic engineering technologists and technicians typically do the following:

- Create basic circuitry and draft sketches to clarify details of design, under engineers' direction
- Build prototypes from plans or sketches
- Assemble, test, and maintain circuitry or electronic components according to engineering instructions, knowledge of electronics, and technical manuals
- Adjust and replace defective circuitry and electronic components
- Make parts, such as coils and terminal boards, using bench lathes, drills, or other machine tools

Electronic engineering technologists and technicians identify and repair equipment malfunctions. They also calibrate and perform preventive maintenance on equipment and systems.

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

<- Summary

Work Environment ->

Work Environment

Electrical and electronic engineering technologists and technicians build, calibrate, and repair electrical instruments or testing equipment.

Electrical and electronic engineering technologists and technicians held about 93,700 jobs in 2024. The largest employers of electrical and electronic engineering technologists and technicians were as follows:

Federal government	13%
Engineering services	12
Semiconductor and other electronic component manufacturing	11
Navigational, measuring, electromedical, and control instruments manufacturing	7
Utilities	6

Electrical and electronic engineering technologists and technicians work on teams with electrical and electronics engineers. They work in offices, laboratories, and factories because their job tasks involve both engineering theory and assembly-line production.

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

Work Schedules

Most electrical and electronic engineering technologists and technicians work full time. Some work day or night shifts, depending on production schedules. In the federal government, their schedules usually follow a standard workweek.

<- What They Do

How to Become One ->

How to Become an Electrical or Electronic Engineering Technologist or Technician

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

Electrical and electronic engineering technologists and technicians typically need an associate's degree. However, requirements may vary by employer.

Education

Associate's degree programs in electrical or electronic engineering technology are available at community colleges and vocational–technical schools. Programs accredited by professional organizations typically include courses such as algebra, programming languages, physics, and circuitry.

Depending on the job tasks or the industry, employers may prefer to hire candidates who have a bachelor's degree. Candidates for other jobs may qualify with a high school diploma.

Licenses, Certifications, and Registrations

Certifications in a variety of fields are available for electrical and electronic engineering technologists and technicians. While optional, these credentials show that the designee has advanced knowledge. Information on certifications is available from CareerOneStop.

Important Qualities

The following are examples of qualities that are important for these workers to perform their duties. For more information, visit the Employment Projections (EP) skills data page.

Communication skills. Electrical and electronic engineering technologists and technicians must be able to follow instructions from engineers and others. They also need to clearly convey problems to engineers.

Detail oriented. Electrical engineering technologists and technicians must pay attention to detail when assembling, troubleshooting, and repairing electronic and electrical mechanical systems.

Math skills. Electrical and electronic engineering technologists and technicians use mathematics for analysis, design, and troubleshooting tasks.

Mechanical skills. Electronic engineering technologists and technicians must use hand tools and soldering irons on small circuitry and electronic parts to build components by hand.

Problem-solving skills. Electrical and electronic engineering technologists and technicians must be able to identify and fix problems that arise in assembling and inspecting electrical engineers' designs and prototypes.

Writing skills. Electrical and electronic engineering technologists and technicians write reports about onsite construction, design problems, or testing results. Their writing must be clear and well organized to convey the information in the reports.

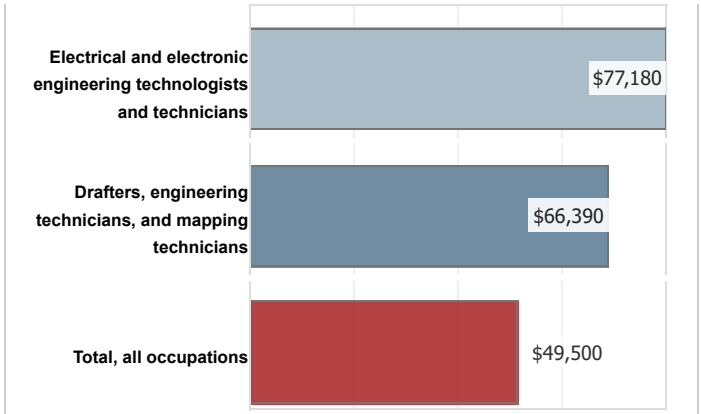
<- Work Environment

Pay ->

Pay

Electrical and Electronic Engineering Technologists and Technicians

Median annual wages, May 2024



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics

The median annual wage for electrical and electronic engineering technologists and technicians was $77,180 in May 2024. 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 $48,250, and the highest 10 percent earned more than $111,790.

In May 2024, the median annual wages for electrical and electronic engineering technologists and technicians in the top industries in which they worked were as follows:

Utilities	$95,110
Federal government	87,960
Engineering services	74,280
Navigational, measuring, electromedical, and control instruments manufacturing	73,280
Semiconductor and other electronic component manufacturing	65,720

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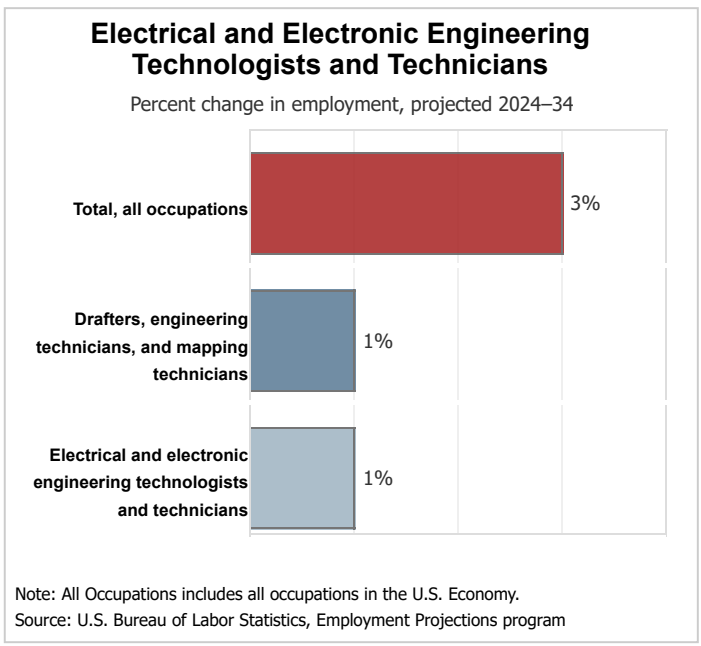
<- How to Become One

Job Outlook ->

Job Outlook



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

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Employment

Electrical and electronics engineering technologists and technicians work closely with electrical and electronics engineers and computer hardware engineers. These workers are needed to support the continuing integration of computer and electronics systems, such as those found in automobiles and in various portable and household products. However, as more manual tasks performed by these technologists and technicians are automated, growth in this occupation could be limited.

Employment projections data for electrical and electronic engineering technologists and technicians, 2024–34

Electrical and electronic engineering technologists and technicians

SOC Code:
17-3023

Employment, 2024:
93,700

Projected Employment, 2034:
94,300

Change, 2024–34 (Percent):
1

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Change, 2024–34 (Numeric):
600

Employment By Industry:
Get data

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

<- Pay

State & Area Data ->

State & Area Data

Occupational Employment and Wage Statistics (OEWS)

The Occupational Employment and Wage Statistics (OEWS) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link below goes to OEWS data maps for employment and wages by state and area. Use the dropdown boxes to select an occupation.

- Occupational Employment and Wage Statistics (OEWS) Profiles

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at www.projectionscentral.org. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

CareerOneStop

CareerOneStop includes hundreds of occupational profiles with data available by state and metro area. There are links in the left-hand side menu to compare occupational employment by state and occupational wages by local area or metro area. There is also a salary info tool to search for wages by zip code.

<- Job Outlook

Similar Occupations ->

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of electrical and electronic engineering technologists and technicians.

Aircraft and Avionics Equipment Mechanics and Technicians

Job Duties:
Aircraft and avionics equipment mechanics and technicians install, test, adjust, and repair equipment and systems in aircraft.

Entry-Level Education:
Postsecondary nondegree
award

2024 Median Pay:
$79,140

Electrical and Electronics Engineers

Job Duties:
Electrical and electronics engineers design, develop, and test electrical and electronic equipment, components, and systems.

Entry-Level Education:
Bachelor's degree

2024 Median Pay:
$118,780

Electrical and Electronics Installers and Repairers

Job Duties:
Electrical and electronics installers and repairers install or repair a variety of electrical equipment.

Entry-Level Education:
See How to Become One

2024 Median Pay:
$71,270

Electro-mechanical and Mechatronics Technologists and Technicians

Job Duties:
Electro-mechanical and mechatronics technologists and technicians operate, test, and maintain electromechanical or robotic equipment.

Entry-Level Education:
Associate's degree

2024 Median Pay:
$70,760

Mechanical Engineering Technologists and Technicians

Job Duties:
Mechanical engineering technologists and technicians help mechanical engineers design, develop, test, and manufacture machines and other devices.

Entry-Level Education:
Associate's degree

2024 Median Pay:
$68,730

<- State & Area Data

More Info ->

Contacts for More Information

For information about certifications, visit CareerOneStop.

O*NET

Electrical and Electronic Engineering Technologists and Technicians

<- Similar Occupations

SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Electrical and Electronic Engineering Technologists and Technicians, at https://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-engineering-technicians.htm (visited *August 28, 2025*).

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U.S. BUREAU OF LABOR STATISTICS Occupational Outlook Handbook Office of Employment and Unemployment Statistics Suitland Federal Center Floor 3 4600 Silver Hill Road Washington, DC 20212-0002

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