



# OCCUPATIONAL OUTLOOK HANDBOOK

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## Electro-mechanical and Mechatronics Technologists and Technicians

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### Summary



#### [Job Outlook](#)

Employment of electro-mechanical and mechatronics 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 1,300 openings for electro-mechanical and mechatronics 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 electro-mechanical and mechatronics technologists and technicians.

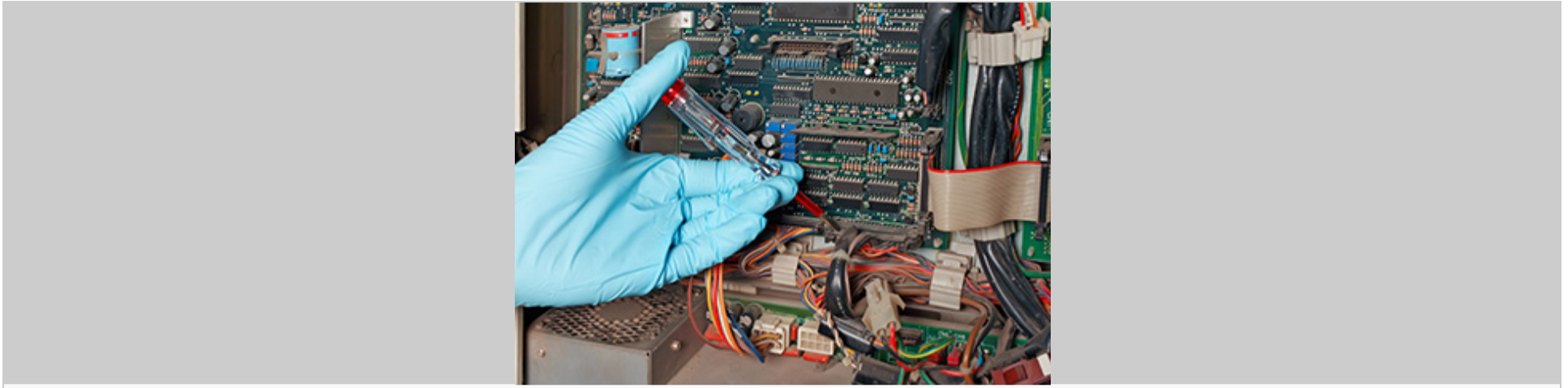
#### [Similar Occupations](#)

Compare the job duties, education, job growth, and pay of electro-mechanical and mechatronics technologists and technicians with similar occupations.

#### [More Information, Including Links to O\\*NET](#)

Learn more about electro-mechanical and mechatronics technologists and technicians by visiting additional resources, including O\*NET, a source on key characteristics of workers and occupations.

## What Electro-mechanical and Mechatronics Technologists and Technicians Do



Electro-mechanical and mechatronics technologists and technicians install, repair, upgrade, and test electronic and computer-controlled mechanical systems.

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

### Duties

Electro-mechanical and mechatronics technologists and technicians typically do the following:

- Read blueprints, schematics, and diagrams to determine the method and sequence of assembly of a machine or a piece of equipment
- Verify dimensions of parts, using precision measuring instruments
- Operate metalworking machines to make housings, fittings, and fixtures
- Inspect parts for surface defects
- Repair and calibrate hydraulic and pneumatic assemblies
- Use instruments to test the performance of electromechanical assemblies
- Use soldering equipment and handtools to install electronic parts and hardware
- Operate, test, or maintain robotic equipment
- Analyze and record test results

Electro-mechanical and mechatronics technologists and technicians test and operate machines in factories and at other worksites. They also document the tests they performed and analyze and record the results of those tests.

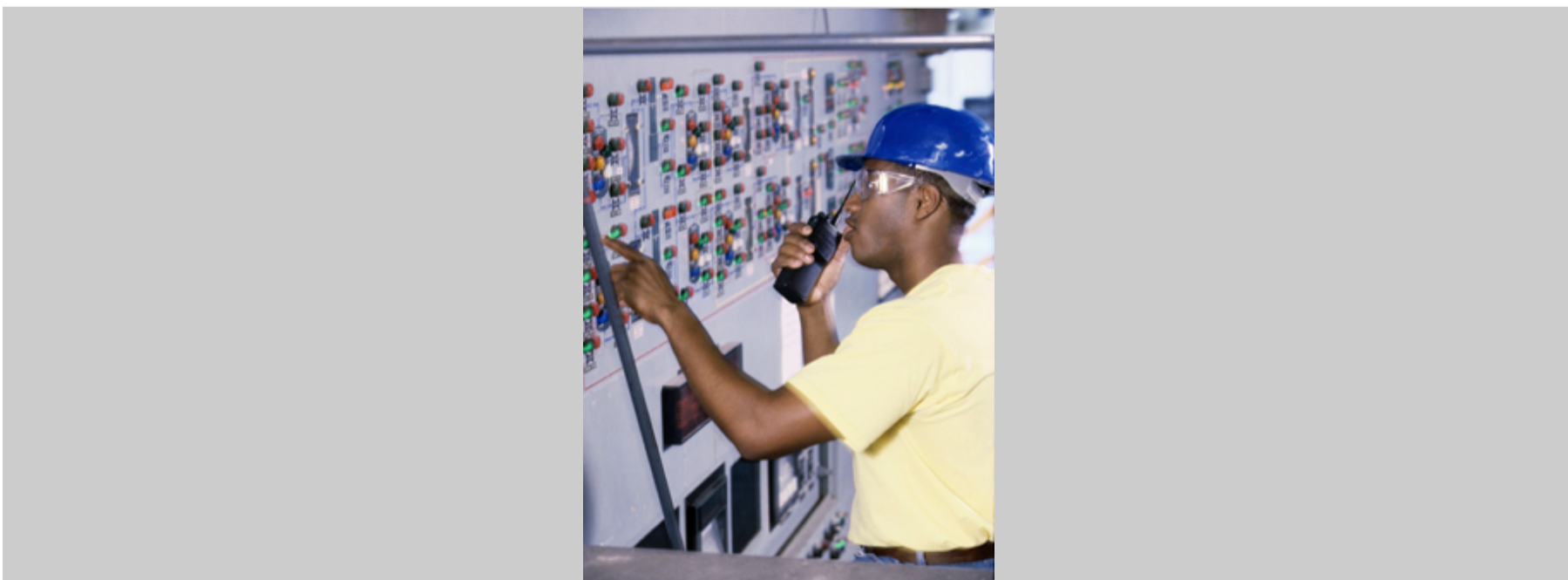
Electro-mechanical and mechatronics technologists and technicians install, maintain, and repair automated machinery and computer-controlled mechanical systems in industrial settings.

They also test, operate, or maintain robotic equipment at worksites. This equipment may include unmanned submarines, aircraft, or similar types of equipment for uses that include oil drilling, deep-ocean exploration, or hazardous-waste removal.

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## Work Environment



Electro-mechanical and mechatronics technologists and technicians test the performance of electro-mechanical assemblies, using test instruments.

Electro-mechanical and mechatronics technologists and technicians held about 15,000 jobs in 2024. The largest employers of electro-mechanical and mechatronics technologists and technicians were as follows:

Machinery manufacturing	12%
Engineering services	9
Scientific research and development services	9
Navigational, measuring, electromedical, and control instruments manufacturing	7
Semiconductor and other electronic component manufacturing	5

Electro-mechanical and mechatronics technologists and technicians work with [electrical engineers](#) and [mechanical engineers](#). They work primarily in manufacturing industries, including those of computer and electronic products and of machinery, and in professional, scientific, and technical services. They often work both at production sites and in offices.

Electro-mechanical and mechatronics technologists and technicians are sometimes exposed to hazards from equipment or toxic materials. However, incidents are rare as long as workers follow safety procedures.

## Work Schedules

Most electro-mechanical and mechatronics technologists and technicians work full time, and some work more than 40 hours per week.

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# How to Become an Electro-mechanical or Mechatronic Technologist or Technician



Electro-mechanical and mechatronics technologists and technicians typically need either an associate's degree or a postsecondary certificate.

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## Education

Associate's degree programs and postsecondary certificates for electro-mechanical and mechatronics technologists and technicians are offered at vocational-technical schools and community colleges.

Employers may prefer to hire graduates of programs accredited by professional organizations. Associate's degree programs usually include courses in subjects such as algebra, trigonometry, and sciences. Depending on the program, students may have the option of concentrating in a field such as electromechanics, mechatronics, or industrial maintenance.

## Licenses, Certifications, and Registrations

Electro-mechanical and mechatronics technologists and technicians may earn optional certification to demonstrate professional competence. 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.** Electro-mechanical and mechatronics technologists and technicians must be able to follow instructions from engineers. They also need to clearly convey problems to engineers.

**Detail oriented.** Electro-mechanical and mechatronics technologists and technicians must take and record the precise measurements that engineers need.

**Dexterity.** Electro-mechanical and mechatronics technologists and technicians must be adept in using handtools and soldering irons on small circuitry and electronic parts to create electronic components.

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

**Math skills.** Electro-mechanical and mechatronics technologists and technicians use mathematics for analysis, design, and troubleshooting in their tasks.

**Mechanical skills.** Electro-mechanical and mechatronics technologists and technicians must create components for industrial machinery or equipment. They must be able to operate equipment such as drill presses, grinders, and engine lathes.

**Problem-solving skills.** Electro-mechanical and mechatronics technologists and technicians must be able to identify and fix problems that arise with engineering designs and prototypes.

**Writing skills.** Electro-mechanical and mechatronics technologists and technicians must write clear, well-organized reports that describe onsite construction, testing results, and problems they found in carrying out designs.

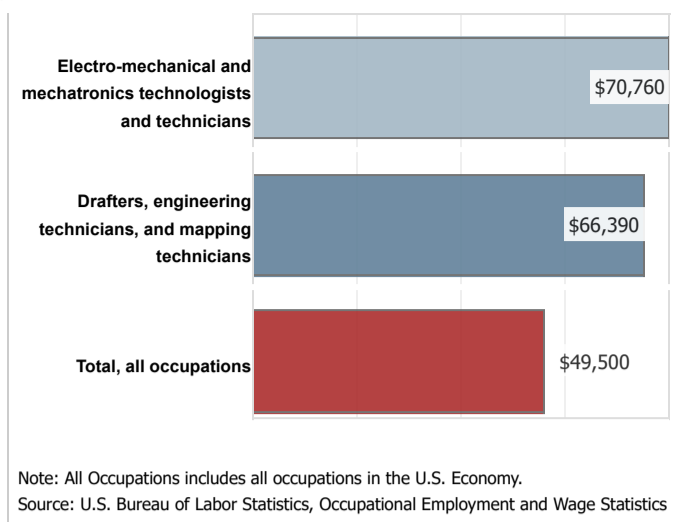
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## Pay

### Electro-mechanical and Mechatronics Technologists and Technicians

Median annual wages, May 2024



The median annual wage for electro-mechanical and mechatronics technologists and technicians was \$70,760 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 \$47,770, and the highest 10 percent earned more than \$109,580.

In May 2024, the median annual wages for electro-mechanical and mechatronics technologists and technicians in the top industries in which they worked were as follows:

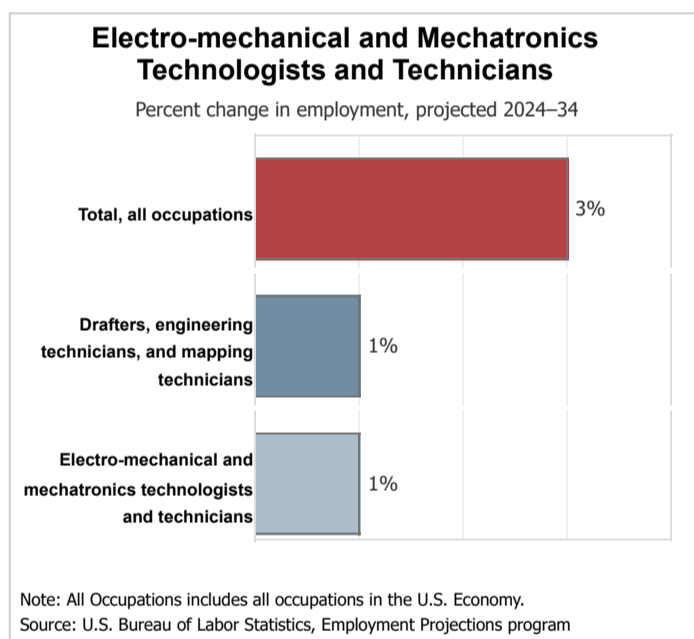
Scientific research and development services	\$89,880
Engineering services	73,340
Semiconductor and other electronic component manufacturing	68,730
Machinery manufacturing	65,000
Navigational, measuring, electromedical, and control instruments manufacturing	58,670

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## Job Outlook



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## Employment

Automation in manufacturing could affect this occupation in both positive and negative ways. While automation may replace certain responsibilities, electro-mechanical and mechatronics technologists and technicians will still be needed to operate and maintain the robotic equipment.

### Employment projections data for electro-mechanical and mechatronics technologists and technicians, 2024–34

Electro-mechanical and mechatronics technologists and technicians
<b>SOC Code:</b> 17-3024
<b>Employment, 2024:</b> 15,000
<b>Projected Employment, 2034:</b> 15,100
<b>Change, 2024–34 (Percent):</b> 1
<b>Change, 2024–34 (Numeric):</b> 200

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

**Employment By Industry:**[Get data](#)

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

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State &amp; Area Data -&gt;

## 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](http://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.

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Similar Occupations -&gt;

## Similar Occupations

This table shows a list of occupations with job duties that are similar to those of electro-mechanical and mechatronics technologists and technicians.

#### [Drafters](#)

**Job Duties:**

Drafters use software to convert the designs of engineers and architects into technical drawings.

**Entry-Level Education:**

Associate's degree

**2024 Median Pay:**

\$65,380

#### [Electrical and Electronic Engineering Technologists and Technicians](#)

**Job Duties:**

Electrical and electronic engineering technologists and technicians help engineers design and develop equipment that is powered by electricity or electric current.

**Entry-Level Education:**

Associate's degree

**2024 Median Pay:**

\$77,180

#### [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

#### [Machinists and Tool and Die Makers](#)

**Job Duties:**

Machinists and tool and die makers set up and operate equipment to produce precision metal parts, instruments, and tools.

**Entry-Level Education:**

[See How to Become One](#)

**2024 Median Pay:**

\$57,700

#### [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

### [Mechanical Engineers](#)

**Job Duties:**

Mechanical engineers design, develop, build, and test mechanical and thermal sensors and devices.

**Entry-Level Education:**

Bachelor's degree

**2024 Median Pay:**  
\$102,320

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## Contacts for More Information

For information about certifications, visit [CareerOneStop](#).

### O\*NET

[Electro-Mechanical and Mechatronics Technologists and Technicians](#)

[Robotics Technicians](#)

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**SUGGESTED CITATION:**

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Electro-mechanical and Mechatronics Technologists and Technicians, at <https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-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

Telephone: 202-691-5700 [www.bls.gov/ooh](http://www.bls.gov/ooh) [Contact OOH](#)