

# AUTOMATION AND CONTROLS

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The Automation & Controls program provides students with knowledge and skills in technical electrical and controls that are utilized in troubleshooting electronics, automation and manufacturing business operations.

- Automation and Controls AAS (<https://coursecatalog.tvcc.edu/pathways/service-production-industry/automation-controls/automation-and-controls-aas/>)
- Automation and Controls Certificate (<https://coursecatalog.tvcc.edu/pathways/service-production-industry/automation-controls/automation-and-controls-certificate/>)

## This program leads to an Automation and Controls AAS degree

Code	Title	Hours
MCHN-1320	Precision Tools and Measurement	3
DFTG-1310	Specialized Basic Computer Aided Drafting (cad)	3
ELPT-1311	Basic Electrical Theory	3
ELMT-1305	Basic Fluid Power	3
MCHN-2344	Computerized Numerical Control Programming	3
DFTG-1357	Specialized Intermediate Computer Aided Drafting	3
RBTC-1243	Vision Systems	2
ELPT-1341	Motor Control	3
INMT-1343	Computer Aided Design/Computer Aided Manufacturing	3
MCHN-2335	Advanced CNC Machining	3
ELMT-1301	Programmable Logic Controllers	3
RBTC-2239	Robot Programming and Diagnostics	2
MCHN-1380	Machine Tool Technology/Machinist	3
RBTC-1241	Vision Systems	2
ELMT-2339	Advanced Programmable Logic Controllers	3
ARCE-2344	Statics and Strength of Materials	3
DFTG-2340	Solid Modeling/Design	3
ELMT-1301	Programmable Logic Controllers	3
RBTC-2239	Robot Programming and Diagnostics	2
ELMT-1305	Basic Fluid Power	3
ELPT-1311	Basic Electrical Theory	3
ELMT-2339	Advanced Programmable Logic Controllers	3
ELPT-1341	Motor Control	3

RBTC-1241	Vision Systems	2
RBTC-1243	Vision Systems	2

## What Electro-Mechanical/Automation and Controls Technologists and Technicians Do (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-2>)

- Electro-mechanical/automation and controls technologists and technicians operate, diagnose, test, and maintain electromechanical or robotic equipment.
- Under general supervision responsible for performing and providing technical support, installation, troubleshooting, documentaton, and process control systems support for all equipment used in manufacturing, packaging, utilities industries and analytical laboratories industries.

### **Summary:**

- Electro-Mechanical/Automation and Controls Technologists and Technicians
- 2020 Median Pay: \$59,800 per year; \$28.75 per hour
- Typical Entry-Level Education: Secondary education and/or Associate's Degree
- Work Experience in a Related Occupation: None
- \*On-the-Job-Training: None
- Number of Jobs, 2020: 13,400
- Job Outlook, 2020-2030: -2% (Decline)
- Employment Change, 2020-2030: -200

## Work Environment (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-3>)

Electro-mechanical/automation and controls technologists and technicians work with electrical and mechanical engineers. Most work full time, and some work more than 40 hours per week.

## How to Become an Electro-mechanical or Mechatronic Technologist or Technician (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-4>)

Electro-mechanical/automation and controls technologists and technicians typically need either an associate's degree or a post-secondary certificate.

## Pay (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-5>)

The median annual wage for electro-mechanical/automation and controls technologists and technicians and technicians was \$59,800 in May 2020.

## Job Outlook (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-6>)

Employment of electro-mechanical/automation and controls technologists and technicians is projected to decline 2% from 2020 to 2030.

Despite declining employment, about 1,200 openings for electro-mechanical/automation and controls technologists and technicians are projected each year, on average, over the decade. All of those openings are expected to result from the need to replace workers who transfer to other occupations or exit the labor force, such as to retire.

## State & Area Data (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-7>)

Explore resources for employment and wages by state and area for electro-mechanical/automation and controls technologists and technicians

## Similar Occupations (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-8>)

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

## More Information, Including Links to O\*NET (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm#tab-9>)

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

### **SUGGESTED CITATION:**

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Police and Detectives, on the Internet at Electro-mechanical and Mechatronics Technologists and Technicians : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics (bls.gov) (<https://www.bls.gov/ooh/architecture-and-engineering/electro-mechanical-technicians.htm>) (visited September 9, 2021)

TVCC has partnered with Career Coach (<https://tvcc.emsicc.com/?radius=&region=10%20Mile%20Radius%20from%20Athens%2C%20TX>) for students to discover majors and in-demand careers and education based on your interests!

- Career Assessment Profiler
- Interactive Career Catalog
- Browse TVCC's Pathways

Some careers in this field will require a bachelor's degree.

- TVCC's AA degrees are fully transferable to public universities in Texas. See an academic advisor or TVCC's university transfer webpage (<https://www.tvcc.edu/Advisement/Category.aspx?z=72>) for more information on this transfer opportunity.
- Many of TVCC's AAS degrees lead to an online Bachelor of Applied Arts and Sciences (BAAS) degree with participating universities. See an academic advisor or the BAAS transfer website (<https://www.ntxccc.org/pathways/>) for more information on this transfer opportunity.