

JOB DESCRIPTION

Manufacturers use raw materials or separate components to build something entirely new. It can be chemical, physical, or mechanical. Typically, power-driven machines and materials-handling equipment are used.

Manufacturing jobs include making prepackaged food or beverages, creating computers and electronics, and producing clothing. Bakers, printers, tailors, furniture builders, and woodworkers are all considered manufacturers. Most manufacturers work in factories, mills, plants, or labs.

PAY

Machinists: \$56,150 median annual wage (\$27.00 per hour) in May 2024 (from the U.S. Bureau of Labor Statistics)

Tool and Die Makers: \$63,180 median annual wage (\$30.37 per hour) in May 2024.

JOB OUTLOOK

Projected to decline 2 percent (-2%) from 2024 to 2034

EDUCATION/TRAINING

Manufacturing occupations are available for people at all education levels, from those without a high school diploma to those with a college degree. Training can be on the job, through apprenticeships and college programs.

IMPORTANT SKILLS/ATTRIBUTES

Required skills/experience vary based on what you are manufacturing. General skills include:

- Math, science, or engineering skills
- Ability to work as part of a team
- Strong critical thinking
- Problem-solving
- Attention to detail
- Dependability
- Dexterity
- Mechanical or technical ability

Ohio is ranked

#3

for manufacturing
in the U.S.

MANUFACTURING IN OHIO: Ohio's manufacturing strength is in industrial machinery, fabricated metals, and transportation equipment. Explore Ohio manufacturers' websites for jobs and/or training opportunities:

- Ohio's top manufacturing employers include Honda, GE Aviation Systems, and Whirlpool
- Local manufacturers include Avery Dennison, Cleveland-Cliffs, Component Repair Technologies, Lincoln Electric, Nordson, Parker Hannafin, Swagelok, Sherwin-Williams, and STERIS

CERTIFICATE/TRAINING PROGRAMS

ALLIANCE FOR WORKING TOGETHER (AWT) (Mentor)

A nonprofit organization providing educational and career-centered programs to place more than 1,000+ students into manufacturing careers. AWT provides pre-apprenticeship and apprenticeship programs that are recognized by the Department of Labor and ApprenticeOhio. Programs include:

- Tool & Die Maker
- Mold Maker
- Precision Machinist
- Tool Programmer/Numerical Control
- Quality Control

thinkmfg.org

ASHTABULA COUNTY TECHNICAL & CAREER CENTER (Jefferson)

Courses in manufacturing, including Computer-Aided Design (CAD), Computer Numerical Control (CNC), and an introduction to the machine trades. A variety of online courses are offered within the manufacturing industry, including CNC machinist and tool and die making.

careertraining.atech.edu/construction-and-trades-trades-programs/?PAGE_SIZE=50

CNC Machinist Training course:

careertraining.atech.edu/training-programs/cnc-machinist/?Category=construction-and-trades-trades

CERTIFICATE/TRAINING PROGRAMS (continued)

AUBURN CAREER CENTER (Kirtland)

Program for students with limited or no prior knowledge of manufacturing to prepare for a manufacturing career.

- Machining/CNC—A manufacturing training program with an internship at a local manufacturer.

auburncc.axstudent.com/#/category/b3

CUYAHOGA COMMUNITY COLLEGE

(Cleveland)

Offers a variety of programs within its Advanced Manufacturing and Engineering Training Academy. Programs are grouped into 0-3 months, 4-12 months, or one year or more. They also offer an apprenticeship program.

www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/manufacturing/index.html

Smart Manufacturing Engineering Technology:

A multidisciplinary engineering program combining electrical, mechanical, and industrial networking. Students can also earn a Bachelor of Science in Integrated Digital Manufacturing Engineering Technology. Earn at least two industry credentials each semester from program partners: FANUC (robotics), Rockwell Automation, Parker Hydraulics, Cisco, Siemens.

www.tri-c.edu/programs/engineering-technology/smart-manufacturing-technology.html

CUYAHOGA VALLEY CAREER CENTER

(Brecksville)

Machining Technology: A 650-hour program providing skills for employment in the machining industry, including machining fundamentals, tool introduction, computer numerical control (CNC) milling and turning, CAD/CAM systems, and advanced machining.

cvccworks.edu/adult-education/

LAKELAND COMMUNITY COLLEGE (Kirtland)

Degree Programs:

- General Manufacturing Major (AWT)
- Maintenance and Repair Concentration (AWT, ArcelorMittal)

Computer Integrated Manufacturing Technology Certificates:

- CNC Operator Mini Certificate
- CNC Set-Up and Programming Technology
- Computer Integrated Mfg. Technology
- Industrial Computer Hardware Technician
- Production Shift Leader/Mfg. Management
- Tool and Die Technology
- Tool Room/Maintenance Machinist

lakelandcc.edu/web/about/computer-integrated-manufacturing-departments

LORAIN COUNTY COMMUNITY COLLEGE (Elyria)

Offers a variety of options for short-term certificates, one-year certificates, and associate degrees in automation engineering technology and manufacturing engineering technologies. Options include a Bachelor of Applied Science in Microelectronic Manufacturing or Smart Industrial Automated System Engineering Technology.

www.lorainccc.edu/engineering/

POLARIS CAREER CENTER (Middleburg Hts)

Precision CNC Machine Technology

600-hour/35-week program that leads to a Level 1 National Institute of Metalworking Skills (NIMS) credential and an OSHA 10-hour certification.

www.polaris.edu/o/pcc/page/cncmachinetechology

TERRA STATE COMMUNITY COLLEGE (Fremont, on-campus housing is available)

Certificate Programs, Mfg. Engineering

- Color for Processors Certificate
- Computer-Aided Design (CAD)
- Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM)
- Industrial Maintenance Certificate
- Integrated Applications - Based Curriculum in Advanced Manufacturing (IACAM)
- Manufacturing Foundation
- Precision Machining/Computer Numerical Control (CNC)

Associate of Applied Science (AAS) Degrees

- Manufacturing Technology
- Mechanical Engineering Technology Degree

www.terra.edu/degrees_programs/technology_allied_health_nursing_division/technology/manufacturing_engineering/index.php

UNIVERSITY OF AKRON (Akron)

Associate of Applied Science in Automated

Manufacturing Engineering Technology: Includes basic technical subjects, management techniques, work measurement, safety procedures, plant layout, quality control, maintenance, production control, economics, and computer applications such as CAD, CNC, and CAM.

bulletin.uakron.edu/undergraduate/colleges-programs/engineering-polymer-science/mechanical-engineering/adv-manufacturing-engineering-tech/

ADDITIONAL RESOURCES

OHIO TECHNET: www.ohiotechnet.org/

MAKING OHIO - CAREER PATHWAYS:

www.makingohio.com/careers/career-pathways/

TRADE COLLEGES: www.tradecolleges.org/