

Career Community:

Engineering Technologies,
Industrial, Advanced Manufacturing
and Automotive Technologies

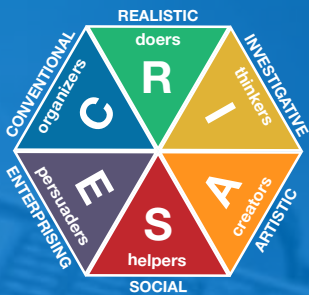


Career Community:

Engineering Technologies, Industrial, Advanced Manufacturing and Automotive Technologies

Find out more.

Identify and explore your unique Holland code.



Schedule a career exploration appointment with a Stark State career specialist.

call 330-966-5459

email careerservices@starkstate.edu

stop in main campus - M104

SSC Akron - Gateway Student Services

or hover your camera over this QR code and tap the link



Do you want to work with your hands, fix technical problems, and find better solutions?

These programs lead to careers in advanced manufacturing, automation, automotive, civil engineering, electric power utility, electrical engineering, electrical maintenance, environmental, HVACR (heating, ventilation, air conditioning, and refrigeration), industrial technologies, welding and engineering transfer programs

Critical skills and abilities

- arm-hand steadiness
- control precision
- critical thinking
- operation monitoring
- problem sensitivity

Technical skills and knowledge

- computer-aided design (CAD) software
- engineering and technology
- mathematics
- mechanical
- physics

Some local employers with jobs in this Career Community

American Electric Power
BWX Technologies
Fastenal
GOJO
Goodyear
Hendrickson
MKMorse
Newell Brands
Powell Electrical Systems
The K Company

Short-term certificates in this Career Community

Automotive and transportation technology

- Automotive aftermarket vehicle modification
- Automotive detailing
- Automotive maintenance and light repair
- Automotive transmission and driveline
- CAT lift truck
- Honda PACT
- Toyota T-TEN
- Toyota T-TEN (electrical manual transmission HVAC)
- Toyota T-TEN (engine repair engine control automatic transmission)
- Toyota T-TEN (electrical brakes steering and suspension)

Engineering technologies

- Advanced CAD (computer-aided drafting)
- Architectural drafting
- AutoCAD
- Civil/surveying
- Civil/surveying drafting
- Construction materials inspection
- Construction technician
- Electrical/electronic troubleshooting
- Industrial controls
- Industrial electricity and electronics
- Machine design
- Mechanical power
- Precision gauging and inspection

Consider these and other careers

job title/description	Entry-level annual wage	Canton average annual wage	Akron average annual wage
automotive service technician/mechanic ✪ diagnose, adjust, repair, or overhaul automotive vehicles	24,500	41,000	41,300
drafter ✪ prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings	37,200	48,900	55,800
engineering technician ✪ apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists	37,150	50,300	53,900
HVAC installer ✪ install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves	33,300	49,600	44,000
machine operator ✪ set up, operate, or tend more than one type of cutting or forming machine tool or robot	28,700	39,700	36,900
tool and die maker ✪ analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools	39,050	48,900	51,000
tractor-trailer truck driver (CDL) ✪ drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds gross vehicle weight; may be required to unload truck	30,650	41,500	44,500
welder ✪ use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products	34,250	45,200	47,000

✪ = high-demand, good-paying occupation: at least 1,000 job openings projected over 10-years (2022-2032) in the northeast Ohio region (9 counties in Akron, Canton and Cleveland MSA's) and jobs pay at least \$15/hour

* may require further education; an advisor will help you determine your pathway

source: JobsEQ® 2020

Industrial technologies

- Automation and robotics
- Automation and robotics specialist
- Basic industrial maintenance
- Basic robotics
- CAD/CAM (computer-aided drafting/ computer-aided machining) specialist
- CDL (commercial driver's license)
- Computer numerical control (CNC)
- HVAC technician (level I)
- HVAC technician (level II)
- Industrial maintenance
- Mechanical drive systems
- Precision machining and CNC programming
- Titanium/stainless steel welding
- Welding Technology American Welding Society certification exam preparation general MIG, TIG, aluminum and oxyfuel welding (general AWS D1.1 exam prep)
- 3G (pipe) welding certification exam preparation
- 6G (pressure vessel / nuclear) welding certification exam preparation

Oil and gas technology

- ShaleNET instrumentation and measurement technician

Majors in this Career Community

EXPLORATORY MAJOR

If you know this career community is the right fit for you but you're unsure of your major, choose the **engineering technology, industrial, advanced manufacturing and automotive technologies exploratory major** to get started in the right direction. Your first 15 credit hours are applicable to all majors within this career community and you'll get the experience to know which major is right for you.

AUTOMOTIVE AND TRANSPORTATION TECHNOLOGY

AUTOMOTIVE TECHNOLOGY

In our two state-of-the-art automotive facilities, you'll use the latest tools and diagnostic equipment to apply practical service techniques to our fleet of late-model vehicles. You'll build hands-on skills in an accredited curriculum, preparing you to pursue Automotive Service Excellence (ASE) certification. You can select specialty electives in Toyota Technician Training Education Network (Toyota TTEN), Honda Professional Automotive Career Training (Honda PACT), Caterpillar lift truck, automotive detailing, automotive aftermarket modifications and ASE test preparation.

GM ASEP

With the General Motors Automotive Service Educational Program (GM ASEP) two-year associate degree, you'll be qualified as a technician at a GM dealership or an approved ACDelco service facility. The GM-specific curriculum provides training credit for more than 56 GM training courses and is accredited by NATEF in all eight ASE certification areas. gmasep.org

ENGINEERING TECHNOLOGIES

CIVIL ENGINEERING TECHNOLOGY

You can be in on the engineering action, helping civil engineers in planning, designing and constructing highways, bridges, dams, tunnels, airports, water supply systems, buildings and other structures. In this accredited program, you'll learn theory along with strong practical lab applications – both indoor and out – as well as the latest computer programs. You also can transfer this associate degree to The University of Akron's construction engineering technology bachelor's degree program.

ARCHITECTURE MAJOR

In the classroom, lab and field, you'll be introduced to the fundamentals of both manual and computer-aided drafting, design, building construction, mechanical equipment and structural engineering. You'll develop marketable talent in drafting/design and an understanding of the principles of engineering as they relate to architecture for working as a technician in architectural and engineering offices, construction estimating, general contracting, drafting, building supply firms, public agencies or technical sales.

CONSTRUCTION MANAGEMENT MAJOR

You'll get technical instruction along with learning management concepts so you'll be ready to take on a supervisory role in the field, whether it's residential or commercial construction.

ELECTRIC POWER UTILITY TECHNOLOGY

FirstEnergy employs a large workforce of power line and substation employees who work on transmission and distribution systems to ensure safe and reliable electric service. Whether you're testing substation performance, constructing distribution lines for a new residential development or repairing damaged power lines after a storm, lineworkers and substation employees enjoy fast-paced and rewarding careers.

LINE WORKER TECHNICIAN

Line work is physically demanding, with exposure to harsh weather and temperature extremes. You'll need to safely climb wood poles and steel towers and operate various types of large line construction equipment. *Available only to FirstEnergy approved candidates. For more information: starkstate.edu/line-worker-technician*

SUBSTATION WORKER TECHNICIAN

Substation workers inspect and maintain substation equipment – new and in-service transformers, circuit breakers and tap changers – and install, adjust, inspect, repair and remove substation systems and equipment. You'll climb steel structures up to 70 feet high, work in confined and underground spaces close to high-voltage equipment and operate heavy equipment. *Available only to FirstEnergy approved candidates. For more information: starkstate.edu/substation-worker-technician*

MECHANICAL ENGINEERING TECHNOLOGY

With a strong emphasis on practical application and experience, you'll learn about mechanical principles involving design, tolerance, stress, strain, friction and vibration. You'll conduct projects, record and represent data, analyze results and prepare formal reports. Your career could be as a mechanical engineering technician, draftsman, metalographer, product development technician, product testing technician, prototype developer, tooling technician, technical designer, technical writer and more.

DESIGN MAJOR

Turn rough sketches, specs and calculations into detailed drawings that make parts and assembly happen using traditional methods as well as using the latest CAD softwares, including AutoCAD, SolidWorks, Inventor and Pro/ENGINEER (Creo Parametric). You'll also learn how to apply CAD solid modeling into 3D prints and scans. You might specialize in designing tools, machines or products for structural, electrical, civil and mechanical systems while making ideas visual through both CAD and traditional drawings. Our accredited MET-design major program gets regular input from local business and industry, so you'll get an education tailored to the job market.

Many of our engineering technology degrees seamlessly transfer to bachelor degree programs at The University of Akron and the University of Mount Union.

PRE-ENGINEERING

Choose pre-engineering in electrical, mechanical or civil fields and be prepared to transfer into your junior year in bachelor's degree programs in engineering at The University of Akron or The University of Mount Union. With a focus on a more academically challenging curriculum, engineering graduates average \$7,000-\$10,000 more per year than engineering technology graduates.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY

As part of the team, trained electrical and electronic engineering technicians bring theoretical knowledge of the field and extensive hands-on experience with lab techniques and equipment. Our accredited program includes electronic courses along with electrical power, machines, robotics, automation, PLCs and controls training. You'll be ready for a career as an electronic technician, industrial process control technician, electrical contractor, project manager, electrical technician, engineering assistant or service technician. You also can transfer this associate degree to The University of Akron's electronic engineering technology bachelor's degree program.

ELECTRO-MECHANICAL MAJOR

As an electro-mechanical major you'll learn about PLCs and Industrial Controls, robotics and programming logic and its application to PLCs and industrial controls, and wiring systems design. Coursework focuses on electrical applications, materials, stress, strain, heat, friction and vibration.

INDUSTRIAL TECHNOLOGIES

ADVANCED MANUFACTURING TECHNOLOGY

Today's manufacturing jobs require higher skill sets from workers – especially those jobs within the automotive, aerospace, electronics, medical devices, plastics, food and beverage and defense/military sectors. This major focuses on using cutting-edge technology, innovative applications and best practices to improve processes and deliver more complex and highly functional products to meet today's workforce needs. You'll become familiar with 3-D printing, CNC (computer numeric controlled) operation/programming, simulation and analysis, high-precision machining, robotics and other intelligent production systems.

AUTOMATION AND ROBOTICS TECHNOLOGY

acquire the latest skills needed for today's increasingly automated manufacturing and production. No longer confined to the automotive industry, automation is now implemented in all types of U.S. industry, including the food processing, medical, farming, electronic assembly, and product packaging industries. You'll get hands-on training with automated equipment, including learning to program and set up Allen/Bradley programmable logic controllers (PLCs) and Fanuc robots. Your course work also will build skills for using AutoCAD, industrial sensors and computer programming.

ELECTRICAL MAINTENANCE TECHNOLOGY

If you're looking for hands-on field work in the world of electricity, this program will provide a solid understanding of electrical terminology and major electrical components ranging from electronics to power distribution. You'll be prepared for electrical contract work and industrial maintenance positions, with the skill sets to properly install, maintain, repair, and troubleshoot electrical systems.

ENVIRONMENTAL WATER AND WASTEWATER TECHNOLOGY

A stable occupation that's not going anywhere: Get trained to hold critical positions such as: water operator, wastewater operator, process operator, treatment plant operator. Water and wastewater technicians are in demand in municipal, agricultural and industrial settings. You may be responsible for operating all equipment in a small plant, or work with several technicians to manage specialized systems. Typical duties involve calibrating equipment, collecting water samples, testing water quality, adjusting chemical levels, maintaining careful records and creating detailed reports.

HVACR TECHNOLOGY

Your technical problem-solving, communication and customer relations skills are an important part of today's technologically complex heating, ventilation, air conditioning and refrigeration (HVACR) industry. We offer labs in commercial/industrial, residential and sheet metal, and you'll also have the opportunity to earn HVACR certifications. You'll be qualified for a job as a technical representative, sales professional, system design technician, customer service manager, project estimator, project manager, dealer field service technician and more. Stark State HVACR grads can go on for a four-year HVACR degree from Ferris State University.

INDUSTRIAL MAINTENANCE

If you're looking to start a new career or are a veteran, an industrial maintenance program is your opportunity to be trained in a growing technology. This major and certificate – developed through a collaboration with Stark State and area manufacturing companies such as Alcoa – prepares you with essential skills for front-line industrial maintenance personnel in for a variety of jobs, including maintaining, troubleshooting and improving existing complex machines and industrial systems; systems integration management, including conveying systems, multi-axis machines, robotic arms, and hydraulic and pneumatic lifts; and technology integration and process improvement by updating systems currently in place with newer technology.

INDUSTRIAL TECHNOLOGY

The industrial technology program offers many career paths, from industrial or facilities supervision to skilled mechanical or electrical maintenance. You'll find a curriculum that includes both basic and advanced manufacturing techniques as well as skilled mechanical and electrical maintenance principles and applications. You'll learn traditional manufacturing methods as well as state-of-the-art and emerging technologies, such as robotics, precision machining, CNC, welding, hydraulics/pneumatics, pumps, pipefitting, mechanical and electrical skilled maintenance and computer control automation.

OIL AND GAS TECHNOLOGIES

MEASUREMENT AND MECHATRONICS TECHNICIAN

A mechatronics engineer unites the principles of mechanics, electronics, and computing to generate a simpler, more economical and reliable system. With this major, you'll take courses covering a wide range of technology associated with the petroleum industry, including gas compression and flow, electrical circuits, corrosion, measurement, production, PLCs, instrumentation, AutoCAD, hazardous waste training and more.



6200 Frank Ave NW
North Canton, OH 44720

Admissions

330-494-6170 ext. 4228 | 1-800-797-8275 | info@starkstate.edu

Career Services

330-966-5459 | careerservices@starkstate.edu

Some careers represented in this viewbook may require further education. The information provided is based on regional data and subject to change. Please see an SSC advisor to make sure you're on the path to success. / Accredited by the Higher Learning Commission / Stark State College is committed to non-discrimination. For the full policy: starkstate.edu/non-discrimination

