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after high school a reality for all
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TECHNICAL CAREER FACTS

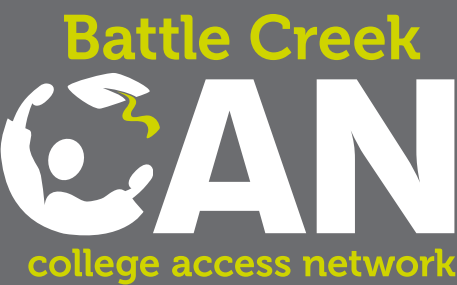
The professional trades are the hardest jobs for employers to fill. More than one million jobs are currently unfilled in manufacturing, trades, transportation and utilities.

People with a professional trades associate degree earn \$4,000 to \$16,000 more per year than those with a humanities associates degree.

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Content brought to you by Battle Creek College Access Network (CAN) in an effort to further our goal of creating a college-going culture by nurturing and guiding students of all ages through high school graduation, and providing support and resources to make education after high school a reality for all.



a partnering initiative of
**Battle Creek
Community Foundation**
For good. For ever. For all.



BATTLE CREEK, MICHIGAN

LOCAL CAREER & TECH PROGRAMS

Today's cutting-edge, rigorous and relevant career and technical education (CTE) prepares youth and adults for a wide range of high-wage, high-skill, high-demand careers.

CACC CALHOUN AREA CAREER CENTER

The Calhoun Area Career Center provides 20 career and technical education programs for area 11th and 12th grade students, serving both public and private school districts throughout the Calhoun Intermediate School District (CISD).

Programs have been designed to assist students with integrating academic knowledge and career/technical skills with the flexibility to meet the individual student's needs.

The involvement and support of business and industry have been a key component to the Center's success. Employers want students to be prepared in the areas of science, mathematics, and technology; as well as have problem solving, teamwork, and communication skills. The CACC staff believes that ALL students should graduate from high school with career and technical skills that support success in their chosen career path.

Arts & Communications

- Graphic Communications Technology

Business, Management, Marketing & Technology

- Computer Networking
- Culinary Arts/Hospitality

Engineering/Manufacturing & Industrial Technology

- Automotive Service Technology
- Aviation Exploration
- Collision Repair Technology
- Computer Aided Design/Computer Aided Machining
- Construction Technology
- Intro to Robotics & Engineering
- Power Equipment Technology
- Welding Technology

Health Sciences

- Emergency Medical Technician (EMT) Basic
- Health Careers Prep
- Health Occupations
- 21st Century Health Careers

Human Services

- Cosmetology
- Early Childhood Education
- Education Academy
- Law Enforcement/Criminal Justice

Natural Resources & Agriscience

- Agriscience



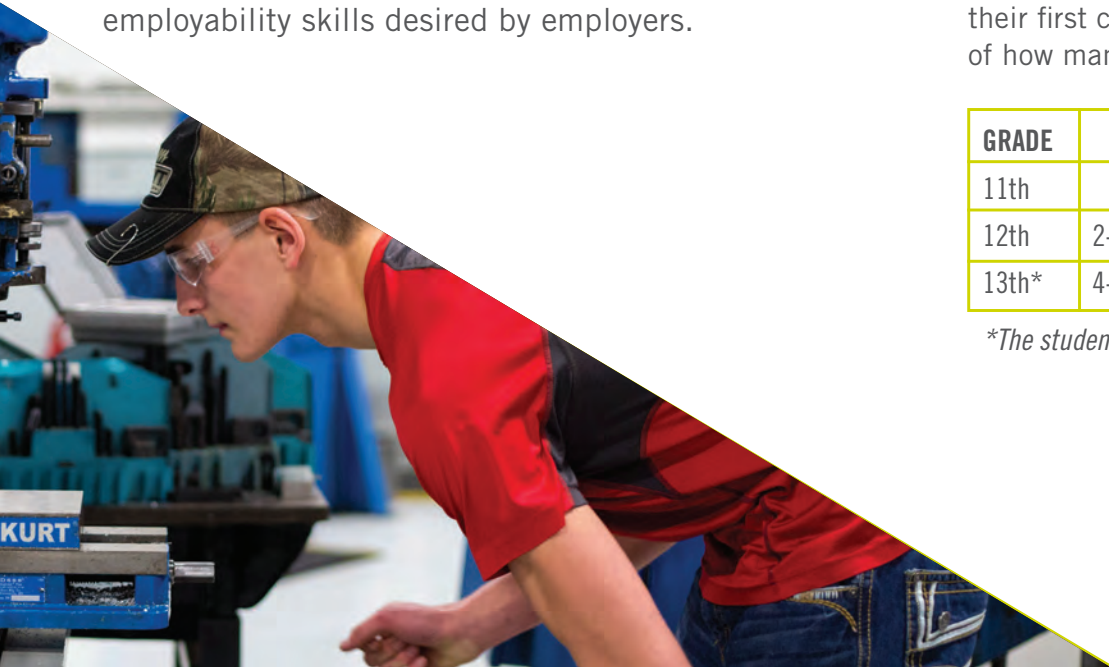
CACC contact: 475 E. Roosevelt Ave
Battle Creek, MI 49017
(269) 968-2271
www.calhounisd.org/cacc

Teresa Osborne
(269) 968-2271, ext 5244
osbornet@calhounisd.org

Early College is a tuition-free college program that enables students to earn a high school diploma and college credits toward a KCC associates degree or technical certificate at little to no cost for students or their families.

Why Was Early College Created?

- Make college an affordable option for more students and families;
- Provide a gradual, structured and supported transition from high school to college;
- Create a strong incentive for students to pursue career pathways needed to sustain and grow the local economy;
- Establish a collaborative network between high schools, the community college and local industries to produce a workforce with the technical and employability skills desired by employers.



BATTLE CREEK APPRENTICESHIPS

An Apprenticeship is a combination of on-the-job training and related classroom instruction under the supervision of a journey-level craft person or trade professional in which workers learn the practical and theoretical aspects of a highly skilled occupation. The length of these programs vary, lasting three-five years, depending on the trade.

AVERAGE LENGTH AND DESCRIPTIONS:

BOILERMAKER 4 YEARS

A boilermaker is a trained craftsman who produces steel fabrications from plates and sections.

BRICKLAYER 3 YEARS

Bricklayers work in varied aspects of building, industrial, commercial and residential construction.

CARPENTER 4 YEARS

Carpenters are required to have a working knowledge of many things, from building of small residential homes, to the construction of the most complex industrial settings.

ELECTRICIAN 5 YEARS

Electricians must be able to lay out, assemble, install, repair and test entire electrical systems.

IRONWORKER 3 YEARS

An ironworker is an important part of the building and construction industry, responsible for performing many duties related to the construction industry.

LABORER 3 YEARS

Laborers may work in the construction industry or other areas such as paving, concrete work, blasting, demolition and small to heavy equipment operation, and act as assistants to other trades.

Who Can Participate?

Early College is available to all interested students that attend districts that currently partner with KCC for Early College. However, there is an intentional focus on those who have traditionally been under served—especially those who are at-risk of not completing high school, are economically disadvantaged or the first in their families to attend college.

How/When Can Students Apply?

Students apply for this program during their sophomore (10th grade) year of high school. If a student is interested in their high school’s Early College program, they will need to schedule a meeting with the Early College contact at their high school.

How Does It Work?

Students have to be accepted into their high school’s Early College program no later than the first high school count day of their junior (11th grade) year. Depending on the student’s high school schedule, they will begin their first college course first semester of the junior year. Here is an example of how many courses an Early College student may enroll in each year:

GRADE	SEMESTER 1	COLLEGE CREDITS	SEMESTER 2	COLLEGE CREDITS
11th	1 college course	3	2 college courses	3-6
12th	2-3 college courses	6-9	2-3 college courses	6-9
13th*	4-5 college courses	12-15	4-5 college courses	12-15

**The student must enroll in a minimum of 12 credits each semester of the 13th year.*



KCC contact: Angie Bess
(269) 565-2093
bessa@kellogg.edu

MILLWRIGHT 4 YEARS

Millwrights are skilled construction mechanics who study and interpret blueprints and then put their knowledge and expertise to work drilling, welding and bolting in order to have a perfect fit.

OPERATOR 3 YEARS

Operating engineers work on machines that erect bridges, lay sewers and water mains, move construction materials, earth, and other heavy materials and apply asphalt and concrete to roads and other structures.

PAINTER 4 YEARS

Apprentices in this union will gain skills for such careers as painters, glaziers, wall coverers, flooring installers, convention and trade show decorators, glassworkers, sign and display workers, asbestos workers/hazmat technicians and drywall finishers.

PLUMBER/PIPEFITTER 5 YEARS

A plumber is a skilled craftworker who installs and repairs pipe systems that carry water, waste drainage, natural and medical gas in buildings.

SHEET METAL 4 YEARS

Sheet metal work is an extremely valuable trade. Sheet metal workers build interior and exterior architectural work, food service kitchen systems, material handling systems, and air handling systems for HVACR systems.

Search for Registered Apprenticeships Nationwide! <https://oa.doleta.gov/bat.cfm>

KELLOGG COMMUNITY COLLEGE

REGIONAL MANUFACTURING TECHNOLOGY CENTER

The Regional Manufacturing Technology Center (RMTc) is an innovative, community-driven training facility in the Fort Custer Industrial Park in Battle Creek, Michigan. The facility is home to KCC's Industrial Trades and Workforce Solutions. Together, these departments design training programs using blended learning techniques.

Training programs are designed to meet the employee training needs of area business and industry. The innovative approach to training enables the RMTc to respond to training needs quickly and efficiently. Training is available to individuals on a walk-in basis or can be scheduled to meet production and service schedules and may be provided either at the worksite, at the RMTc or at any location in the community.

INDUSTRIAL TRADES PROGRAMS:

- Industrial Electricity & Electronics
- Industrial Heating, Ventilation, Air Conditioning and Refrigeration (HVAC-R)
- Industrial Machining Technology
- Industrial Pipefitting, Industrial Technology, Industrial Trades, Industrial Welding, Renewable Energy



RMTc contact: 405 Hill Brady Road
Battle Creek, MI 49037
(269) 965-4137
www.kellogg.edu/academics/academic-programs/industrial-trades/



MICHIGAN’S HOT 50 JOB OUTLOOK Through 2024

MICHIGAN’S DEMAND OCCUPATIONS	PROJECTED ANNUAL JOB OPENINGS	HOURLY WAGE RANGE	PERCENT JOB GROWTH 2014-2024	EDUCATION AND TRAINING BEYOND HIGH SCHOOL
ACCOUNTANTS AND AUDITORS	1,190	\$24 - \$40	13.6%	Bachelors degree, license
ARCHITECTURAL AND ENGINEERING MANAGERS	436	\$47 - \$70	10.5%	Bachelors degree, plus work experience, license
CIVIL ENGINEERS	262	\$29 - \$40	12.0%	Bachelors degree, license
COMMERCIAL AND INDUSTRIAL DESIGNERS	196	\$31 - \$45	10.2%	Bachelors degree, license
COMPUTER AND INFORMATION SYSTEMS MANAGERS	262	\$42 - \$63	16.6%	Bachelors degree, plus work experience
COMPUTER SYSTEMS ANALYSTS	513	\$30 - \$51	22.6%	Bachelors degree
COMPUTER USER SUPPORT SPECIALISTS	601	\$17 - \$29	14.3%	Some college, no degree
DATABASE ADMINISTRATORS	104	\$31 - \$50	14.0%	Bachelors degree, plus work experience
EDUCATION ADMINISTRATORS, POSTSECONDARY	227	\$31 - \$64	10.2%	Masters degree, plus work experience
ELECTRICAL ENGINEERS	276	\$33 - \$49	9.0%	Bachelors degree, license
ELECTRICAL POWER-LINE INSTALLERS & REPAIRERS	195	\$29 - \$41	10.0%	Long-term OJT
ELECTRICIANS	562	\$21 - \$34	14.1%	Apprenticeship, license
FINANCIAL ANALYSTS	190	\$28 - \$46	10.4%	Bachelors degree
FINANCIAL MANAGERS	446	\$37 - \$66	8.9%	Bachelors degree, plus work experience
GENERAL AND OPERATIONS MANAGERS	2,169	\$30 - \$67	9.4%	Bachelors degree, plus work experience
HEALTHCARE SOCIAL WORKERS	247	\$20 - \$31	14.8%	Masters degree, license
HVAC MECHANICS AND INSTALLERS	231	\$17 - \$27	15.6%	Postsecondary non-degree award, plus long-term OJT, license
HEAVY AND TRACTOR-TRAILER TRUCK DRIVERS	1,566	\$16 - \$23	11.8%	Postsecondary non-degree award, plus short-term OJT, license
HUMAN RESOURCES MANAGERS	154	\$34 - \$59	10.5%	Bachelors degree, plus work experience
INDUSTRIAL ENGINEERS	967	\$33 - \$50	13.5%	Bachelors degree, license
INDUSTRIAL MACHINERY MECHANICS	752	\$19 - \$30	27.1%	Long-term OJT
INDUSTRIAL PRODUCTION MANAGERS	410	\$39 - \$62	8.0%	Bachelors degree, plus work experience
INSURANCE SALES AGENTS	684	\$17 - \$37	11.4%	Moderate-term OJT, license
LAWYERS	395	\$33 - \$63	7.4%	Doctoral or professional degree, license
LOAN OFFICERS	241	\$18 - \$33	11.2%	Bachelors degree, plus moderate-term OJT, license
MACHINISTS	1,279	\$15 - \$24	19.0%	Long-term OJT
MANAGEMENT ANALYSTS	484	\$29 - \$49	14.2%	Bachelors degree, plus work experience
MARKET RESEARCH ANALYSTS & SPECIALISTS	405	\$21 - \$42	21.6%	Bachelors degree
MARKETING MANAGERS	139	\$37 - \$72	12.8%	Bachelors degree, plus work experience
MECHANICAL ENGINEERING TECHNICIANS	178	\$22 - \$35	13.1%	Associates degree
MECHANICAL ENGINEERS	1,994	\$34 - \$52	18.1%	Bachelors degree, license
MEDICAL AND HEALTH SERVICES MANAGERS	440	\$33 - \$55	9.9%	Bachelors degree, plus work experience
MILLWRIGHTS	118	\$25 - \$36	20.1%	Apprenticeship
NETWORK & COMPUTER SYSTEMS ADMINISTRATORS	222	\$26 - \$43	9.4%	Bachelors degree
NURSE PRACTITIONERS	136	\$40 - \$51	23.5%	Masters degree, license
OCCUPATIONAL THERAPISTS	166	\$29 - \$40	16.3%	Masters degree, license
OPERATIONS RESEARCH ANALYSTS	106	\$31 - \$49	35.7%	Bachelors degree
PERSONAL FINANCIAL ADVISORS	339	\$24 - \$59	26.8%	Bachelors degree, plus long-term OJT, license
PHYSICAL THERAPIST ASSISTANTS	213	\$18 - \$27	28.6%	Associates degree, license
PHYSICAL THERAPISTS	422	\$33 - \$46	21.9%	Doctoral or professional degree, license
PHYSICIAN ASSISTANTS	158	\$39 - \$56	19.4%	Masters degree, license
PHYSICIANS AND SURGEONS, ALL OTHER	439	\$58 - \$100+	7.8%	Doctoral or professional degree, plus residency, license
PLUMBERS, PIPEFITTERS, & STEAMFITTERS	279	\$19 - \$35	11.4%	Apprenticeship, license
REGISTERED NURSES	3,372	\$27 - \$37	12.4%	Bachelors degree, license
SALES MANAGERS	334	\$39 - \$73	7.7%	Bachelors degree, plus work experience
SALES REPS, EXCEPT TECH/SCIENTIFIC PRODUCTS	1,555	\$18 - \$39	7.9%	Moderate-term OJT training
SALES REPS, TECH/SCIENTIFIC PRODUCTS	240	\$27 - \$52	8.8%	Bachelors degree, plus moderate-term OJT
SOFTWARE DEVELOPERS, APPLICATIONS	541	\$31 - \$51	20.0%	Bachelors degree
SOFTWARE DEVELOPERS, SYSTEMS SOFTWARE	428	\$34 - \$51	19.5%	Bachelors degree
WEB DEVELOPERS	108	\$22 - \$37	24.7%	Associates degree

Source: DTMB, Bureau of Labor Market Information and Strategic Initiatives www.michigan.gov/lmi



ABOUT THE PROGRAM

Industrial manufacturing programs utilize human activity, from small to large-scale projects, for industrial production in which raw materials are transformed into finished goods on a large scale. Students can begin exploring Industrial Technology programs at the CACC beginning in high school.

The Kellogg Community College Regional Manufacturing Technology Center (RMTC) offers innovative, nontraditional style of training that incorporates competency-based modules, individualized instruction and self-paced learning. Modules are credit based.

KCC offers two Industrial Welding credentials: Industrial Welding Certificate (25 credits) and Associate in Applied Science for Industrial Welding (62 credits).

Popular transfer destinations for KCC's Industrial Welding students include Ferris State University, Siena Heights University and Western Michigan University.



Matt Lake, 26
Industrial Welding Program at RMTC | Graduation: 2019

“My grandpa was a welder so I grew up watching him. I always liked to work with my hands so this is a good path for me.”

Student Profile

Matt was both a student of the Calhoun Area Career Center and the Kellogg Community College RMTC. Having received his Industrial Welding Certificate, he is now working part-time as an Adjunct Instructor at KCC, working full-time as Welding Support Staff at the CACC, all while finishing his Associates Degree program. “My grandpa was a welder so I grew up watching him. I always liked to work with my hands so this is a good path for me.” Matt plans to be an instructor in Industrial Welding here in Battle Creek.

What You’ll Learn & Do

Welding is the most common way of permanently joining metal parts. In this process, heat is applied to metal pieces, melting and fusing them to form a permanent bond. Welding also is used to join steel beams in the construction of buildings, bridges, and other structures and to join pipes in pipelines, power plants, and refineries.

Day to Day Tasks

- Weld Components in flat, vertical, or overhead positions
- Operate safety equipment and use safe work habits
- Lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers

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career pathway options



OPTION 1 EXAMPLE
Entry-level Welder —
Median Hourly Wage \$17.50



OPTION 2 EXAMPLE
Industrial Machinery Mechanic —
Median Hourly Wage \$24.26



OPTION 3 EXAMPLE
Industrial Engineer —
Median Hourly Wage \$40.13

High School: Career-ready certifications available at CACC, entry-level positions in various industries
Apprentice Programs: Boilermaker, Fabricator, Ironworker, Sheet metal, Pipefitter, Plumber
College: Certificate, Associates Degree, Bachelors Degree

CAREER PATH





ABOUT THE PROGRAM

High school courses in automotive repair, electronics, computers, and mathematics provide a good background for prospective service technicians. However, high school graduates typically need further training to become fully qualified. Completing a vocational or other postsecondary education program in automotive service technology is considered the best preparation for entry-level positions.

Students can begin exploring Automotive Service Technology, Collision Repair Technology or Power Equipment Technology while in High School at the CACC. Various automobile manufacturers and dealers sponsor associates degree programs. Students in these programs typically spend alternating periods attending classes full time and working full time in service shops under the guidance of an experienced technician.



Tyler Woodard, 22
Automotive Technology Program at Kalamazoo Valley Community College | Graduation: Spring 2019

“My grandfather worked on cars. I grew up restoring vehicles with him and want to continue this as my career.”

Student Profile

Originally from Litchfield, MI, Tyler is an employee of Heritage Chevrolet in Battle Creek. Having worked on cars professionally for 6 years, he is now working toward an Associates Degree in Drivability, a program that, among other things, teaches students about the computer functionality with motor engines. “My grandfather worked on cars. I grew up restoring vehicles with him and want to continue this as my career.” Tyler prefers the dealership setting and plans to continue working in Battle Creek.

What You’ll Learn & Do

Automotive service technicians and mechanics, often called service technicians or service techs, inspect, maintain, and repair cars and light trucks. Although service technicians work on traditional mechanical systems, such as engines, transmissions, and drive belts, they must also be familiar with a growing number of electronic systems.

Day to Day Tasks

- Identify problems, often by using computerized diagnostic equipment
- Plan work procedures, using charts, technical manuals, and experience
- Follow checklists to ensure that all critical parts are examined
- Perform basic care and maintenance, including changing oil, checking fluid levels, and rotating tires



career pathway options



OPTION 1 EXAMPLE
Automotive Glass Installer and Repairer — Median Hourly Wage \$16.51



OPTION 2 EXAMPLE
Automotive Body and Related Repairer — Median Hourly Wage \$19.97



OPTION 3 EXAMPLE
Automotive Engineer — Median Hourly Wage \$40.19

High School: Career-ready certifications available at CACC, enter the workforce
Apprentice Programs: Sheet metal, Painter, Operator
College: Certificate, Associates Degree, State Certifications

CAREER PATH





ABOUT THE PROGRAM

The Western Michigan University College of Aviation offers a Bachelor of Science program called Aviation Maintenance Technology (AMT) which prepares students to enter aircraft maintenance, and repair, manufacturing, and other positions in the aerospace industry.

The curriculum focuses on aircraft structures, power plants, avionics, system design, testing and inspection. The skills and knowledge coupled with a solid academic foundation prepares students for employment in a wide range of aircraft maintenance, manufacturing, and aviation support careers.

The Bachelor of Science degree prepares graduates for leadership and management roles further in their career. Students can begin exploring careers in Aviation at the CACC while in High School.



AVIATION

hourly wage ranges \$24.06-\$32.70

Aircraft Structure, Surfaces, Rigging, and Systems Assembler \$24.06

Aircraft Mechanic and Service Technician \$28.93

Aerospace Engineer \$32.70

(OTHER TITLES IN THIS FIELD INCLUDE AIRFRAME AND POWERPLANT TECHNICIAN, AVIATION TECHNICAL OPERATIONS, AIRCRAFT MAINTENANCE AND REPAIR, TECHNICAL BULLETIN WRITER)



Tyrone Hendrix Jr., 22
Aviation Maintenance Program at WMU College of Aviation
Graduation: April 2018

“There’s something about how military fighter jets look that makes me want to work on, and know, everything about them.”

Student Profile

Tyrone recalls clearly the time when a family friend took him on a tour of a hanger where he saw US Airmen and military contracted technicians working together on a fighter jet. His mother’s constant aspirational support combined with his father’s experience in the US Army working on rotary aircrafts and other vehicles was the perfect recipe to inspire Tyrone to pursue his own interests, “There’s just something about how military fighter jets look that makes me want to work on, and know, everything about them.” Tyrone hopes to also become a contracted technician working with the US Military.

career pathway options

What You’ll Learn & Do

Airplanes are highly complex machines that require reliable parts and service to fly safely. To keep an airplane in operating condition, aircraft and avionics equipment mechanics and technicians perform scheduled maintenance, make repairs, and complete inspections. They follow detailed federal regulations set by the Federal Aviation Administration (FAA).

Day to Day Tasks

- Inspect wings, fuselage, and other airframe structures using non-destructive testing procedures and equipment
- Overhaul and inspect powerplant, engines, and other systems found on aircraft
- Inspect and repair all parts and components found on aircraft, replace if necessary, using hand and/or power tools
- Keep records of maintenance and repair work

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DUNCAN
AVIATION



OPTION 1 EXAMPLE
Aircraft Structure, Surfaces, Rigging, and Systems Assembler —
Median Hourly Wage \$24.06



OPTION 2 EXAMPLE
Aircraft Mechanic and Service Technician —
Median Hourly Wage \$28.93



OPTION 3 EXAMPLE
Aerospace Engineer —
Median Hourly Wage \$32.70

High School: Enter a training program offered by an air carrier

Apprentice Programs: Electrician, Sheet metal, Painter

College: Certificate, Associates Degree, Bachelors Degree

CAREER PATH



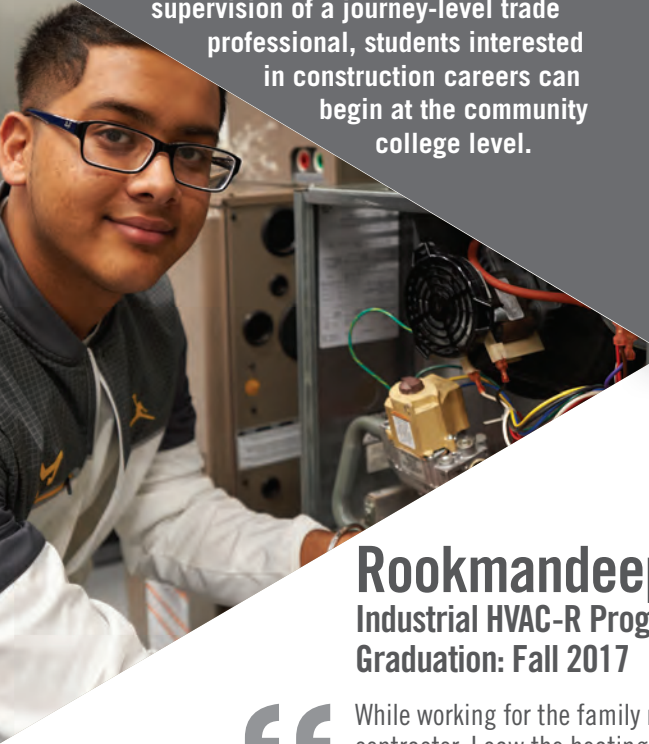


ABOUT THE PROGRAM

For craftsmen and laborers, construction careers don't carry any specific education requirements, although a high school diploma and proficiency in math, English and shop are useful. Some craftsmen and laborers learn skills on the job by apprenticing in various areas, and others even attend professional trade schools to learn a specific trade. Heating, Ventilation, Air Conditioning and Refrigeration (HVAC-R) systems are critical within the construction industry. HVACR-related programs are one of many pathway options for students considering how to enter a career in this profession.

For most management positions in construction, you'll need to combine experience with at least a bachelors degree in building science, construction engineering or construction science.

Students can begin exploring Construction Technology while in High School at the CACC. Outside of personalized training under the supervision of a journey-level trade professional, students interested in construction careers can begin at the community college level.



Rookmandeep Munder, 19
Industrial HVAC-R Program at RMTC
Graduation: Fall 2017

“While working for the family retail business, I came to know an HVAC contractor. I saw the heating and cooling work that he did and wanted to learn more so I could be more skillful for future repairs.”

Student Profile

Rookman is taking full advantage of the module-based style training provided at the Kellogg Community College RMTC. “While working for the family retail business, I came to know an HVAC-R contractor. I saw the heating and cooling work that he did and wanted to learn more so I could be more skillful for future repairs.” Rookman wants to become an independent contractor for commercial servicing and is working with a mentor to grow in the industry.

What You'll Learn & Do

HVAC-R technicians work on heating, ventilation, cooling, and refrigeration systems that control the temperature, humidity and air quality in buildings. By providing a climate-controlled environment, refrigeration systems, for example, make it possible to store and transport food, medicine, and other perishable items. Some technicians specialize in one or more specific aspects of HVAC-R, such as radiant heating systems, solar panels, testing and balancing, or commercial refrigeration.

Day to Day Tasks

- Use blueprints or design specifications to install or repair HVAC-R systems
- Connect systems to fuel and water supply lines, air ducts, and other components
- Determine HVAC-R systems' energy use and make recommendations to improve their efficiency

(OTHER TITLES IN THIS FIELD INCLUDE
BRIDGE CONTRACTOR, FOREMAN/PROJECT MANAGER,
PRODUCTION SUPERINTENDENT)

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CSM GROUP



career pathway options



OPTION 1 EXAMPLE
Construction Laborer —
Median Hourly Wage \$16.07



OPTION 2 EXAMPLE
Heating and Air Conditioning
Mechanic and Installer —
Median Hourly Wage \$22.07



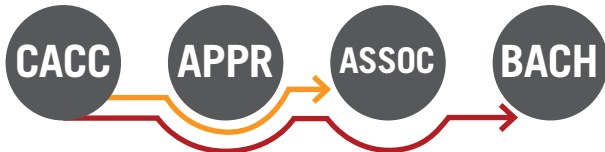
OPTION 3 EXAMPLE
Construction Manager —
Median Hourly Wage \$40.27

High School: Career-ready certifications available at CACC, work for area contractors, become a licensed contractor

Apprentice Programs: Carpenter, Electrician, Plumber/Pipefitter, Painter, Bricklayer, Laborer or related industry experience

College: Options from one-year to four-year or Masters Degree in specialty fields

CAREER PATH



Source: Bureau of Labor Statistics and MyFuture.com

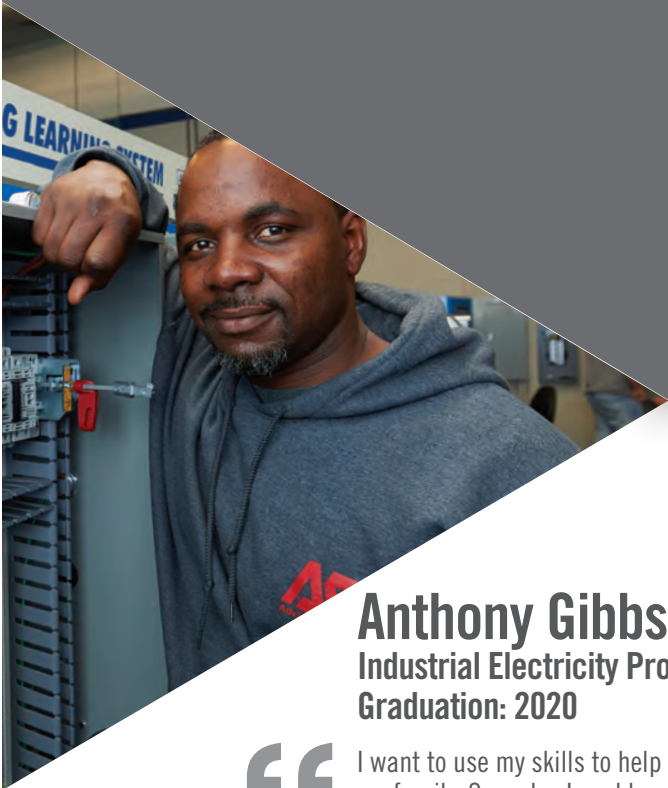


ABOUT THE PROGRAM

In the processes of advanced manufacturing and electrical construction, electrical and electronic control systems are crucial components that require sophisticated computer programming, monitoring and diagnostics skills.

The Industrial Electricity and Electronics Program at the Kellogg Community College Regional Manufacturing Technology Center (RMTC) prepares students to install, maintain and repair such systems.

Unlike traditional academic courses, the offerings in KCC's Industrial Electricity and Electronics Program consist of short modules that are components of larger units of study. Modules are often less than 1 credit hour apiece and can be completed at a student's own pace in a matter of hours or days.



Anthony Gibbs, 44
Industrial Electricity Program at RMTC
Graduation: 2020

I want to use my skills to help build the community and to take care of my family. Someday I could see myself running a company.

Student Profile

Anthony started as a temp worker and was promoted to Quality Technician at a local business in Battle Creek. Having earned a Certificate in Industrial Electricity, he is currently working toward an Associates Degree in the same program area at the Kellogg Community College RMTC. "I want to use my skills to help build the community and to take care of my family. Someday I could see myself running a company." Anthony is thankful to the RMTC staff who have provided excellent mentorship.

What You'll Learn & Do

An electrician is a trades person specializing in electrical wiring of buildings, stationary machines, and related equipment. Electricians may be employed in the installation of new electrical components or the maintenance and repair of existing electrical infrastructure. Electrical Engineers design, develop, test, and supervise the manufacturing of electrical equipment.

Day to Day Tasks

- Design new ways to use electrical power to develop or improve products
- Perform detailed calculations to develop manufacturing, construction, and installation standards and specifications
- Direct the manufacturing, installation, and testing of electrical equipment to ensure that products meet codes
- Investigate complaints from customers or the public, evaluate problems, and recommend solutions

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career pathway options



OPTION 1 EXAMPLE
Electrician —
Median Hourly Wage \$27.92



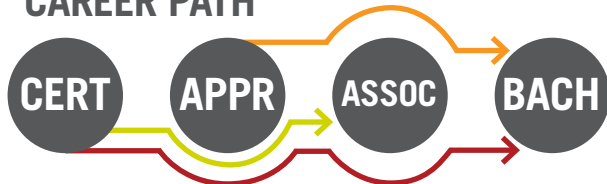
OPTION 2 EXAMPLE
Electro-Mechanical Technician —
Median Hourly Wage \$30.87



OPTION 3 EXAMPLE
Electrical Engineer —
Median Hourly Wage \$41.33

High School: College degree required
Apprentice Programs: Internships and apprenticeships are available for aspiring electricians
College: Associates Degree, Bachelors Degree, Masters Degree

CAREER PATH





ABOUT THE PROGRAM

Every sector of industry is dependent upon people with specialized machining technology training in such areas as automotive, aerospace, medical supply, furniture, metals/metal products, plastics, machinery and renewable energy. Students can begin exploring manufacturing careers through the Computer Aided Design/Computer Aided Machining program offered at the CACC.

The Industrial Machining Technology program at Kellogg Community College prepares students with hands-on skills to create precision components. Students in this program will learn to work with designers and engineers to make fixtures, dies, molds, gauges and other industrial-specific parts which support the manufacturing process.

Popular transfer destinations for KCC's Industrial Machining Technology students include Ferris State University, Siena Heights University and Western Michigan University.



Lyle McIlvain, 20
Industrial Machining Technology Program
at RMTC | Graduation: 2019

“It began with a metal shop class in High School. I really liked the machining aspect of it and my grandparents did this type of work.”

Student Profile

Lyle is a federally registered apprentice for Tool & Die with Cosma Casting Michigan. Having already built a functional steam engine during a competitive high school program, he is now working to receive his Journeyman Card and an Associates Degree in Industrial Machining Technology. “It began with a metal shop class in High School. I really liked the machining aspect of it and my grandparents did this type of work.” Lyle understands the importance of gaining skills in this area, as many professionals in this industry plan to soon retire.

What You'll Learn & Do

Machinists use machine tools, such as lathes, milling machines, and grinders to produce precision metal parts. Many machinists must be able to use both manual and CNC (Computer Numerical Control) machinery. CNC machines control the cutting tool speed and do all necessary cuts to create a part. The machinist determines the cutting path, the speed of the cut, and the feed rate by programming instructions into the CNC machine.

Day to Day Tasks

- Read blueprints, sketches, specifications, or CAD (Computer Aided Design) and CAM (Computer Aided Machining) files for making tools and dies
- Compute and verify dimensions, sizes, shapes, and tolerances of workpieces
- Set-up, operate, and disassemble conventional, manual, and CNC machine tools
- Test completed tools and dies to ensure that they meet specifications

Tool & Die Maker \$24.55
Mechanical Drafter \$26.19
Mechanical Engineer \$40.48

(OTHER TITLES IN THIS FIELD INCLUDE CNC MACHINIST, ENGINEERING TECHNICIAN, QUALITY TECHNICIAN, CAD DESIGNER)



career pathway options



OPTION 1 EXAMPLE
Tool & Die Maker —
Median Hourly Wage \$24.55



OPTION 2 EXAMPLE
Mechanical Drafter —
Median Hourly Wage \$26.19



OPTION 3 EXAMPLE
Mechanical Engineer —
Median Hourly Wage \$40.48

High School: Career-ready certifications available at CACC, entry-level positions in various industries

Apprentice Programs: Boilermaker, Ironworker, Machinist, Moldmaking, Plumber, Sheet metal, Tool and die

College: Certificate, Associates Degree, Bachelors Degree

CAREER PATH



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For information on becoming a sponsor, please contact: Terry Burleson 269-719-8228 or terry@battlecreekcan.org

GLOSSARY OF TERMS

CERTIFICATE — a document granted upon the successful completion of a certificate program, typically taking less than two years to complete.

CERTIFICATION EXAM — Often referred to simply as “Certification,” this exam assures an individual is qualified to perform a job or task, generally following educational training.

COLLEGE — any program or training which earns you a degree/credential that can help you find meaningful employment after high school.

COOPERATIVE EDUCATION (CO-OP) — student placement in a business/industry related to their educational training, through which the student earns pay and credit.

DUAL ENROLLMENT — a student enrolled in high school and at least one college course at the same time.

GRADUATE DEGREE — an advanced academic degree granted after six or more years of study. Examples include Masters and Doctoral degrees.

INTERNSHIP — on-the-job work experience that is related to your career interests or current field of study, internships can be paid or unpaid.

JOURNEYMAN — employment in a building trade, such as an electrician, plumber, machinist, and HVAC-R contractor, which usually requires a state or local (city or county) license as a journeyman or master.

MEDIAN HOURLY WAGE — wage estimate between the highest paid 50% and the lowest paid 50% of workers in that occupation; half of the workers in a given occupation earn more than the median wage and half the workers earn less than the median wage.

PROFESSIONAL TRADES — skilled professional trades careers require specific training, such as a carpenter, tile setter, or electrician; much of the labor involved with skilled trades is manual work and can be physically demanding.

SOFT SKILLS — personal attributes that enable someone to interact effectively with other people. Examples include communication, professionalism, punctuality, attitude, conflict resolution, etc.

TRADE UNION — a labor/trade union, is an organized association of workers, often in a trade or profession, formed to protect and further their rights and interests as it pertains to employment.

VOCATIONAL TRAINING — training that focuses on practical applications of skills learned. A large part of the education in vocational schools is hands-on training.

Friday, October 6, 2017

Manufacturing Day

at Kellogg Community College
Regional Manufacturing Technology Center (RMTC)
405 Hill Brady Road, Battle Creek

Who should attend?

High school seniors and high school educators

Please pre-schedule your tour by calling 269.965-4137

- OPTION 1 Schedule a 90 minute tour at the RMTC, see live demonstrations and meet with local manufacturers
- OPTION 2 Schedule a 60 minute tour at Rösler or Denso
- OPTION 3 Schedule both RMTC and Rösler or Denso tours

Learn what manufacturing is — and isn't

- What modern manufacturing facilities are really like
- What kinds of jobs are available in manufacturing
- What makes manufacturing jobs satisfying and rewarding
- What skills and education are needed to qualify for jobs
- What typical wages are possible in manufacturing

MEG DAY[®]

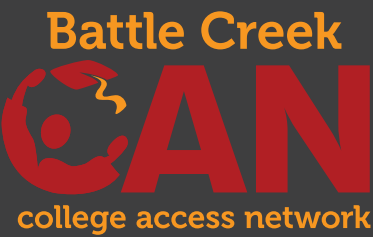
Tour Times at KCC-RMTC

- Group A 8:45am - 10:15am
- Group B 10:30am - 12:00pm

Tour Times at Rosler or Denso

- Group A 10:30am - 11:30am
- Group B 12:30pm - 1:30pm

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