Pathway Name: Automotive Maintenance & Light Repair Technician
CIP 47.0604.01 (ATC 480110X)

Pathway Courses:
470507 Maintenance and Light Repair A and Lab
470509 Maintenance and Light Repair B and Lab
470511 Maintenance and Light Repair C and Lab
470513 Maintenance and Light Repair D and Lab
470501 Automotive CO-OP

Industry Certification:
ASE Student Certification - Auto Maintenance and Light Repair

Industry Certification

What Automotive Service Technicians and Mechanics Do: Automotive service technicians and mechanics, often called service technicians or service techs, inspect, maintain, and repair cars and light trucks.

Work Environment: Most automotive service technicians and mechanics work in well-ventilated and well-lit repair shops. Although automotive problems often can be identified and fixed with computers, technicians perform many tasks with greasy parts and tools, sometimes in uncomfortable positions.

How to Become an Automotive Service Technician or Mechanic: A high school diploma or the equivalent is typically the minimum requirement to work as an automotive service technician or mechanic. Because automotive technology is becoming increasingly sophisticated, some employers prefer automotive service technicians and mechanics who have completed a formal training program in a postsecondary institution. Industry certification usually is required once the person is employed.

Pay: The median annual wage for automotive service technicians and mechanics was $39,550 in May of 2017.

Job Outlook: Employment of automotive service technicians and mechanics is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations. Job opportunities for qualified job seekers should be very good.
Pathway Name:
Diesel Brake Repair
CIP 47.0605.01

Pathway Courses:
DIT 180-181 ECTC (ATC 470422)
Brakes (Diesel) and Lab

ADX 120-121 ECTC (ATC 470556X) Basic Automotive
Electricity and Lab OR Special
Problems I Diesel

DIT 190-191 (ATC 470425)
Electrical Systems for Diesel
Equipment and Lab

DIT 100 (ATC 470406)
Mechanical Concepts*AND
DIT 103 ECTC (ATC 470403)
Preventive Maintenance and Lab*

Note: (*) Indicates half-credit course

Program Location:
Elizabethtown Community and
Technical College

Industry Certification:
ASE Student Certification - Diesel
Breaks or Diesel Electrical
Electronic System

Industry Certification

Diesel Brake Repair

What Diesel Brake Repairers Do: Common duties of someone working in diesel brake repair include performing diagnostic tests and determining common brake problems, repairing and replacing brakes, and performing routine brake maintenance.

Work Environment: Brake repair technicians may find job opportunities at automotive shops, automobile dealers, and auto parts stores.

How to Become a Diesel Brake Repairer: Employers typically seek brake repair technicians who hold a certificate or an associate’s degree in automotive service technology from a vocational-technical school or community college. Certificate programs typically last about six months to one year, while an associate’s degree program usually takes two years to complete. Courses include automotive brake systems, steering and suspension, electrical systems, maintenance, and basic auto service. In addition to coursework, brake repair technicians may complete hands-on training through cooperative work or internship programs. Automotive Service Excellence (ASE) certification is also available in brakes. To earn certification, students must pass a brakes test, which is one of eight tests available from ASE for automobiles and light trucks.

Pay: The median annual wage is $37,850 (2015)

Job Outlook: The U.S. Bureau of Labor Statistics (BLS) projected average growth in the employment of automotive service technicians from 2014 to 2024, an increase of 5%, noting that those with the most training and/or experience will more easily compete for jobs (www.bls.gov). The BLS published the median annual salary of automotive repair technicians, including specialists such as brake repair technicians, as $37,850 in May 2015.

All courses in this pathway are dual credit offerings through ECTC.
Flight and Aeronautics Pathway: Students will complete what is considered the first phase of aviation training leading to a commercial pilot license. They will gain technical knowledge and skills to the flying and/or navigation of commercial passenger and cargo, agricultural, public service, corporate aircraft flight systems and controls, flight crew operations and procedures, radio communications, navigation procedures and systems, airways safety and traffic regulations, and governmental rules and regulations pertaining to piloting aircraft. Students will also study the increasing role of Unmanned Air Systems (Drones) on our society and Industry. Many other careers in aviation will be explored in this pathway from Aviation maintenance to Aerospace Engineering.

Work Environment: The work environment varies with occupation from the pilots seat to the aviation hangar for maintenance and repair. Aerospace engineers work in assembly area and offices where they design the latest aerospace technologies.

How to Become an Aerospace Engineer, Pilot, or an Aviation Mechanic: Aerospace engineers must have a bachelor’s degree in aerospace engineering or another field of engineering or science related to aerospace systems. Many aircraft and avionics equipment mechanics and technicians learn their trade at an FAA-approved aviation maintenance technician school. Pilots attend a FAA approved flight school and must pass examinations and flight hours for licensure.

Pay: The median annual wage for aerospace engineers was $105,380 in May 2014. Many corporate pilots make in excess of $100,000. The median annual wage for aircraft and avionics equipment mechanics and technicians was $56,980 in May 2014.
What Aircraft Maintenance Technicians Do:
Aircraft maintenance technicians are trained to adjust aircraft engines and pneumatic systems, remove and install aircraft components and diagnose problems. Some of their duties include checking electrical systems, repairing pilot static systems and performing regular preventive inspections. Technicians examine aircraft fuselage (the aircraft's main body) and landing gear for cracks or leakage. They repair or replace defective aircraft parts and check completed work to ensure that it meets quality standards.

Work Environment:
Mechanics and technicians work in hangars, in repair stations, or on airfields. They must meet strict deadlines while following safety standards. Most mechanics and technicians work near major airports. Mechanics may work outside on the airfield, or in climate-controlled shops and hangars. Civilian mechanics employed by the U.S. Armed Forces work on military installations.

How to Become an Aircraft Maintenance Technician:
Some aircraft mechanics and service technicians enter the occupation with a high school diploma or equivalent and receive on-the-job training to learn their skills and to be able to pass the FAA exams. Aviation maintenance personnel who are not certified by the FAA work under supervision until they have enough experience and knowledge and become certified.

Pay: Median annual salary is $60,270 per year in May of 2017.

Job Outlook: Overall employment of aircraft and avionics equipment mechanics and technicians is projected to grow 5 percent from 2016 to 2026, about as fast as the average for all occupations.

All courses in this pathway are dual credit offerings through JCTC.
**What Carpenters Do:** Carpenters construct and repair building frameworks and structures—such as stairways, door frames, partitions, and rafters—made from wood and other materials. They also may install kitchen cabinets, siding, and drywall.

**Work Environment:** Because carpenters are involved in many types of construction, from building highways and bridges to installing kitchen cabinets, they work both indoors and outdoors. The work is sometimes strenuous, and carpenters have a higher rate of injuries and illnesses than the national average.

**How to Become a Carpenter:** Although most carpenters learn their trade through an apprenticeship, some learn on the job, starting as a helper.

**Pay:** The median annual wage for carpenters was $45,170 in May 2017.

**Job Outlook:** Employment of carpenters is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. Increased levels of new homebuilding and remodeling activity will require more carpenters.

Click [HERE](#) for TRACK Program information.
Pathway Name:
Industrial Electrician Assistant
CIP 46.0302.02
AND/OR
Skilled Trade Construction
Electrical Track
CIP 46.0302.99

Pathway Courses:
460316 Circuits 1
460312 Electrical Construction 1
460331 Electrical Motor Controls
460313 Electrical Construction 2 (TRACK)

Industry Certification:
NCCER Core Curriculum and Electrician Tech (Level 1) and OSHA 10 AND/OR KY TRACK Pre-Apprenticeship Certification and OSHA 10

Industry Certification:
ELECTRICAL TRACK

What Electricians Do: Electricians install and maintain electrical power, communications, lighting, and control systems in homes, businesses, and factories.

Work Environment: Electricians work indoors and outdoors, in nearly every type of facility. Almost all electricians work full time, which may include evenings and weekends. Although the work is not as dangerous as other construction occupations, potential injuries include electrical shocks and burns, cuts, and falls.

How to Become an Electrician: Although most electricians learn through an apprenticeship, some start out by attending a technical school. Most states require electricians to be licensed.

Pay: The median annual wage for electricians was $54,110 in May 2017.

Job Outlook: Employment of electricians is projected to grow 20 percent from 2012 to 2022, faster than the average for all occupations. As homes and businesses require more wiring, electricians will be needed to install the necessary components. Electricians with the widest variety of skills should have the best job opportunities.

Click HERE for TRACK Program information.
**Pathway Names:**
Automotive Engineering  
CIP 15.0803.00

**Pathway Courses:**
210221 Engineering 1 at BCHS or BEHS
210232 Electrical/Electronics Engineering at BCHS or BEHS
470507 Maintenance and Light Repair A and Lab
470509 Maintenance and Light Repair B and Lab
470511 Maintenance and Light Repair C and Lab
470513 Maintenance and Light Repair D and Lab

**Industry Certification:**
REC-Foundation Pre-Engineering Cert and  
ASE Automotive Maintenance and Light Repair

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**What is the Automotive Engineering Hybrid?** This pathway provides the opportunity to blend Career and Technical Education (CTE) courses with Engineering courses to help students apply technical skills along with Science, Technology, Engineering, and Math (STEM) skills to solve real-world problems. This pathway prepares individuals to apply engineering principles and technical skills in support of engineers and other professionals engaged in developing, manufacturing, and testing self-propelled ground vehicles and their systems. It includes instruction in vehicular systems technology, design and development testing, prototype and operational testing, inspection and maintenance procedures, instrument calibration, test equipment operation and maintenance, and report preparation.

**Automotive Engineering Job Growth:** Automotive engineers also known as mechanical engineers, is projected to grow 5 percent to 2022. This is a little slower than the average for most occupations. The need for design on the next generation of vehicles such as electric cars and vehicle systems will keep the career in demand. The mean annual salary is around $64,570 per year. To stay appealing to potential companies, engineering candidates should stay up-to-date with the latest software in the industry.
What is the Electrical Construction Engineering Hybrid? This pathway provides the opportunity to blend Career and Technical Education (CTE) courses with Engineering courses to help students apply technical skills along with Science, Technology, Engineering, and Math (STEM) skills to solve real-world problems. This pathway prepares individuals to apply technical knowledge and skills to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. It includes instruction in the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.

Electrical/Electronics Engineering Job Outlook: Electrical and electronics engineering technicians typically need an associate’s degree. The median annual wage for electrical and electronics engineering technicians was $63,660 in May 2017. Electrical and electronics engineers must have a bachelor’s degree. Employers also value practical experience, such as internships or participation in cooperative engineering programs. The median annual wage for electrical engineers was $95,060 in May 2017. The median annual wage for electronics engineers, except computer was $102,180 in May 2017.
**Pathway Names:**
Welding Engineering  
CIP 15.0614.00

**Pathway Courses:**
210221 Engineering 1 at BCHS or BEHS
210222 Engineering 2 at BCHS or BEHS
480505 Blueprint Reading for Welding
480501 Cutting Processes
480521 Shielded Metal Welding (SMAW)

**Industry Certification:**
REC-Foundation Pre-Engineering Cert and 2-F (AWS) Welding

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**What is the Welding Engineering Hybrid?**
This pathway provides the opportunity to blend Career and Technical Education (CTE) courses with Engineering courses to help students apply technical skills along with Science, Technology, Engineering, and Math (STEM) skills to solve real-world problems. Welding Engineers design and develop metal components for products for the pipeline, automotive, boiler making, ship building, aircraft and mobile home industry. Welding Engineers must have knowledge of cutting processes and gas metal arc welding procedures for efficient development of these industrial processes.

**Welders Job Outlook:** Employment of welders, cutters, solderers, and brazers is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations. The nation’s aging infrastructure will require the expertise of welders, cutters, solderers, and brazers to help rebuild bridges, highways, and buildings. The median annual wage for welders, cutters, solderers, and brazers was $40,240 in May 2017. Employment of mechanical engineering technicians is projected to grow 5 percent from 2016 to 2026, about as fast as the average for all occupations. There should be opportunities for those who can master new software and technology in addition to traditional manual skills. The median annual wage for mechanical engineering technicians was $55,360 in May 2017.
**What Patient Care Tech’s Do:** Patient Care Technicians help doctors, nurses and other medical professionals by taking care of ill or injured patients under their care by taking notes, taking vital signs, and assisting patients with everyday tasks.

**Work Environment:** Patient Care Technicians will usually work full time in hospitals, doctor’s offices, nursing homes or extended care facilities.

**How to Become a Patient Care Technician:** Patient Care Technicians must complete a 8-12 month career training program. Students are trained in patient care, vital signs measurement, dialysis, patient assistance and phlebotomy.

**Pay:** The potential annual wage for a Patient Care Technician is $32,000.
Healthcare Occupations:
Employment of healthcare occupations is projected to grow 18 percent from 2016-2026, much faster that the average for all occupations, adding about 2.4 million new jobs. Healthcare occupations are projected to add more jobs than any of the other occupational groups. This projected growth is mainly due to an aging population, leading to greater demand for healthcare services.

Pay:
The medium annual wage for healthcare practitioners and technical occupations (such as registered nurses, physicians and surgeons, and dental hygienists) was $64,770 in May 2017, which was higher than the median annual wage for all occupations in the economy of $37,690.

Healthcare support occupations (such as home health aides, occupational therapy assistants, and medical transcriptionists) had a median annual wage of $28,710 in May 2017.

Explore different healthcare occupations and find out more information.
Click Link
**What HVAC Mechanics and Installers Do:** Heating, air conditioning, and refrigeration mechanics and installers—often called heating, ventilation, air conditioning, and refrigeration (HVACR) technicians—work on heating, ventilation, cooling, and refrigeration systems that control the temperature and air quality in buildings.

**Work Environment:** HVACR technicians work mostly in homes, schools, hospitals, office buildings, or factories. Their worksites may be very hot or cold because the heating and cooling systems they must repair may not be working properly and because some parts of these systems are located outdoors. Working in cramped spaces and during irregular hours is common.

**How to Become a HVAC Tech:** Because HVACR systems have become increasingly complex, employers generally prefer applicants with postsecondary education or those who have completed an apprenticeship. Some states and localities require technicians to be licensed.

**Pay:** The median annual wage for heating, air conditioning, and refrigeration mechanics and installers was $47,100 in May 2017.

**Job Outlook:** Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow 15 percent from 2016 to 2026, much faster than the average for all occupations. Commercial and residential building construction is expected to drive employment growth, and job opportunities for HVACR technicians are expected to be good.
What Industrial Machinery Mechanics, Machinery Maintenance Workers, and Millwrights Do: Industrial machinery mechanics and machinery maintenance workers maintain and repair factory equipment and other industrial machinery, such as conveying systems, production machinery, and packaging equipment. Millwrights install, dismantle, repair, reassemble, and move machinery in factories, power plants, and construction sites. IMT's increasingly are working on repairing, maintaining, and programming robots for automation of manufacturing processes.

Work Environment: Workers in this occupation must follow safety precautions and use protective equipment, such as hardhats, safety glasses, and hearing protectors. Most work full time in factories, refineries, food-processing facilities, or power plants, or at construction sites. However, they may be on call and work night or weekend shifts. Overtime is common.

How to Become an Industrial Machinery Mechanic, Machinery Maintenance Worker, or Millwright: Industrial machinery mechanics, machinery maintenance workers, and millwrights typically need a high school diploma. However, industrial machinery mechanics need a year or more of training either on the job or through a technical school, whereas machinery maintenance workers typically receive on-the-job training that lasts up to a year. Most millwrights go through a 4-year apprenticeship.

Pay: The median annual wage for industrial machinery mechanics, machinery maintenance workers, and millwrights was $50,440 in May 2017.

Job Outlook: Employment of industrial machinery mechanics, machinery maintenance workers, and millwrights is projected to grow 16 percent from 2014 to 2024, much faster than the average for all occupations. The need to keep increasingly sophisticated machinery functioning and efficient will drive demand for these workers.
What Computer Numerical Control Operators Do:
Machinists and tool die makers set up and operate a variety of computer-controlled and mechanically controlled machine tools to produce precision metal parts, instruments, and tools.

Machinists typically do the following:
- Read blueprints, sketches, or computer-aided design (CAD) and computer-aided manufacturing (CAM) files
- Set up, operate, and disassemble manual, automatic, and computer numerically controlled (CNC) machine tools
- Turn, mill, drill, shape, and grind machine parts to specifications
- Use CAD software to design parts and G-code for CNC machines

Work Environment:
Because machinists and tool and die makers work around machine tools that may present hazards, these workers must follow precautions to avoid injuries. For example, workers must wear protective equipment, such as safety glasses, to shield against bits of flying metal, earplugs to dampen the noise produced by machinery, and masks to limit their exposure to fumes.

How to Become a Computer Numerical Control Operator:
JCTC has a 2-year program that trains students to become machinists or tool and die makers.

Pay: Median annual salary is $42,600 per year

Job Outlook:
Employment of machinists is projected to grow 2 percent from 2016-2026. With improvements in technologies, such as computer numerically controlled (CNC) machines, autoloaders, high-speed machining, and lights-out manufacturing, machinists will still be required to set up, monitor, and maintain these systems.
What Brickmasons, Blockmasons, and Stonemasons Do: Brickmasons, blockmasons, and stonemasons (or, simply, masons) use bricks, concrete blocks, and natural and man-made stones to build fences, walkways, walls, and other structures.

Work Environment: The work is physically demanding because masons lift heavy materials and often must stand, kneel, and bend for long periods. They usually work outdoors, so poor weather conditions may reduce work activity. Most masons work full time.

How to Become a Brickmason, Blockmason, or Stonemason: Although most masons learn through an apprenticeship, some learn on the job. Others learn through 1- or 2-year mason programs at technical schools.

Pay: In May 2012, the median annual wage for brickmasons and blockmasons was $46,440. The median annual wage for stonemasons was $37,350 in May 2012.

Job Outlook: Employment of masons is projected to grow 34 percent from 2012 to 2022, much faster than the average for all occupations. Population growth will result in the construction of more schools, hospitals, homes, and other buildings. Workers with a good job history and with experience in masonry and construction should have the best job opportunities.
What Welders, Cutters, Solderers, and Brazers do: Welders, cutters, solderers, and brazers use hand-held or remotely controlled equipment to join or cut metal parts. They also fill holes, indentations, or seams in metal products. Sometimes welders help in the fabrication of new parts as well.

Work Environment: Workers in this occupation must follow safety precautions and use protective equipment, such as hardhats, safety glasses, and hearing protectors. Workers may work outdoors, often in inclement weather, or indoors, sometimes in a confined area. They may work on a scaffold, high off the ground, and they occasionally must lift heavy objects and work in awkward positions. Most work full time and overtime is common.

How to Become an Welder Solderer or Brazer: A high school diploma or equivalent, combined with technical and on-the-job training, is typically required for anyone to become a welder, cutter, solderer, or brazer.

Pay: The median annual wage for industrial machinery mechanics, machinery maintenance workers, and millwrights was $40,240 in May 2017.

Job Outlook: Employment of welders, cutters, solderers, and brazers is projected to grow 10 percent from 2016 to 2026, faster than average for all occupations. The nation’s aging infrastructure will require the expertise of welders, cutters, solderers, and brazers to help rebuild bridges, highways, and buildings.
"Riverview Opportunity Center (ROC) is a small school setting designed to give students more access to the Bullitt County Area Technology Center (ATC). Students learn in a non-traditional academic setting and have the opportunity to learn a variety of trades by having more access to the ATC. Due to the flexible schedule, ROC students have opportunities to graduate early, co-op, and or work release in a job that coincides with the trade(s) they are studying. Students from North Bullitt, Bullitt East and Bullitt Central attend our programs. Although these students are considered Riverview students, they maintain dual enrollment with their home school which allows them the opportunity to participate in sports, clubs, and other after school activities within their home schools. Transportation to and from ROC is provided by BCPS. Students are bused to and from each day for these programs. In addition to having more access to the ATC, Riverview Opportunity Center also houses an innovative Informational Technology program with opportunities for a co-op position in the IT field. Students can attend Riverview full time for this program or be shuttled from their home school for 2 periods a day. Space for each program is limited and students are required to apply to each program for selection. To obtain an application please see your school counselor or call Riverview at (502)869-6600."
Within the computer programming pathway students will be prepared to design and create apps, as well as troubleshoot the latest programming languages used in industry.

BCPS is currently in the second year of a pre-apprenticeship partnership with the technology solutions company Interapt. Students that take project based programming have an opportunity to interview to be accepted into the apprenticeship program at Interapt after he or she completes high school graduation requirements.

https://www.youtube.com/watch?v=k7NU_WmR1pA&feature=youtu.be

https://www.youtube.com/watch?v=-V--ahdWw-k&feature=youtu.be

Click HERE for TRACK Program information.
Pathway Names:
Network Administration
CIP 11.0901.01
(All Online Dual Credit with JCTC)

Pathway Courses:
CIT 105 JCTC Introduction to Computers
CIT 120 JCTC Computational Thinking
CIT 120 JCTC Computer Hardware and Software
CIT 160 JCTC Intro to Networking Concepts

Program Location:
Riverview Opportunity Center

Industry Certification:
Computer Tech Basic JCTC
A+ Prep JCTC

The network administration pathway will help students learn new administration support skills or upgrade existing computer information systems skills. Students will be able to properly install and manage networking software, effectively troubleshoot and fix networking problems.

Riverview Opportunity Center is partnering with Jefferson Community and Technical College to provide dual credit to the ROC students. Utilizing the Work Ready KY scholarship program from KHEAA students are able to take up to two years of college courses at no cost to the student.
Pathway Names:
Network Security
CIP 11.1003.00
(All Online Dual Credit with JCTC)

Pathway Courses:
CIT 105 JCTC Introduction to Computers
CIT 111 JCTC Computer Hardware and Software Maintenance
CIT 160 JCTC Intro to Networking Concepts
CIT 180 JCTC Security Fundamentals

Program Location:
Riverview Opportunity Center

Industry Certification:
Computer Technician JCTC
Computer Tech Basic JCTC
A+ Prep JCTC
Security Fundamentals Certificate JCTC

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<th>Network Security</th>
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<tr>
<td>The Network Security pathway will help students to be able to properly design and install a wired and wireless LAN system, including all network devices, physically connect servers and desktop computers.</td>
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Riverview Opportunity Center is partnering with Jefferson Community and Technical College to provide dual credit to the ROC students. Utilizing the Work Ready KY scholarship program from KHEAA students are able to take up to two years of college courses at no cost to the student.