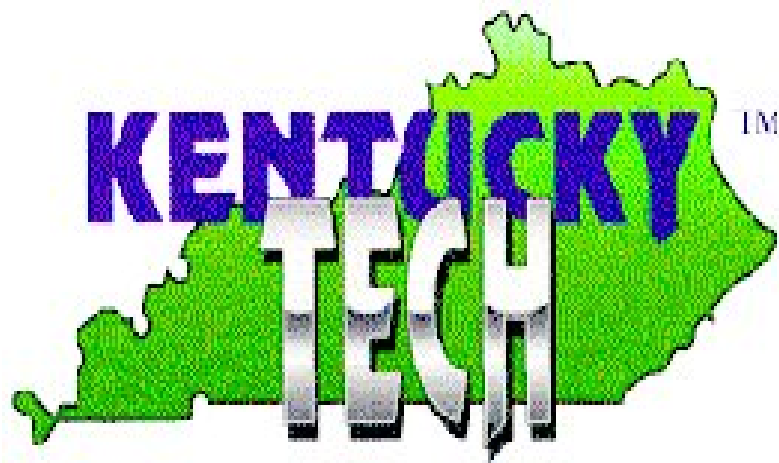


KY TECH – HARRISON COUNTY AREA TECHNOLOGY CENTER

(859) 234-5286

PROGRAM GUIDEBOOK 2022-2023 SCHOOL YEAR



Work Based Learning Placement Policy

(Any Program Area)

Work-Based Learning (WBL) is an effective teaching approach used to engage students in real-life occupational experiences. It incorporates structured, work-based learning activities into the curriculum, allowing a student to apply knowledge and skills learned in class and connect these learning experiences in the workplace. Work-based learning provides students with the opportunity to engage and interact with employers, while learning to demonstrate essential employability and technical skills necessary for today's workforce. It is imperative that all parties understand that a WBL placement is not solely to send a student to work but also to enhance what is being learned in the student's declared pathway. Multiple types of WBL opportunities exist, please refer to the Work-Based Learning Manual for more detailed information,

<https://education.ky.gov/CTE/cter/Documents/KY-WBL-Manual.pdf>

Prerequisites/ Requirements:

1. The student must be enrolled in a career pathway at the Harrison Co ATC and have reached **concentrator status** (have earned two credits) by the year of WBL enrollment.
2. A WBL student should have met benchmarks for any part of the Transition Ready status made available to them prior to and/or during the co-op year (eg. Appropriate Industry Certification, Passing 2 CTE-approved Dual Credit courses with a C or better, etc.).
3. A WBL student **MUST** maintain passing grades in all classes to continue their WBL assignment.

WBL Application and Enrollment Process:

1. Applications for WBL will be accepted from January through the end of March (time frame will be adjustable depending on home school scheduling sessions and deadlines).
2. From March to May- ATC instructors will review applications and contact potential employers to verify their participation in the WBL program. At this time, instructors will verify that the placement has enough tasks to justify a valid WBL placement.
3. In May, a mandatory meeting for approved students, employers, parents, and instructors will be held at the ATC to discuss the expectations for all stakeholders.
4. By the end of May, a final list of participating WBL students will be provided to the home school guidance counselors for scheduling.
5. If a student is placed in WBL and is terminated based on performance and/or behavior or leaves the placement of their own freewill, the student will be placed into a class with the supervising instructor for the remainder of the school year.
6. If a student is laid-off by the employer or let go by the employer for unforeseen circumstance not related to the student's performance or behavior, the student will have the option of scheduling another WBL placement. All steps above must be followed for a mid-year placement, and the students should expect a 2-4 week time lapse before the placement can be approved and started. During that time, the student will remain with the instructor during that scheduled WBL time.
7. Realizing that opportunities may arise outside of the above timeline, students may request a WBL placement mid-year, but all appropriate steps must be taken. A request may be made during the summer, but the process will not start until the first part of August. Therefore, if the placement is approved, a student will not be scheduled into the placement for 2-4 weeks after August 1.

Kentucky High-Demand Industry Sectors and Top Occupations				
Business & IT Services	Construction	Healthcare	Advanced Manufacturing	Transportation & Logistics
Business & IT Services This sector comprises professional and technical occupations in business services, information technology, wholesale trade, and distribution, and technical occupations.	Construction This sector comprises occupations primarily engaged in the construction and maintenance of buildings.	Healthcare This sector comprises both health care services and social assistance.	Advanced Manufacturing This sector comprises occupations in the mechanical, physical or chemical transformation of materials, substances or components into new products.	Transportation & Logistics This sector comprises occupations in industries providing motor vehicle services to passengers or cargo, warehousing and storage, and logistics that plan, direct or coordinate distribution activities of goods.
Financial Analysts and Auditors	Construction Laborers	Registered Nurses	Manufacturing Operator/Technician	Laborers, Packers, Movers
Software Developers/Other	Carpenters	Personal Care Aides	Machine Maintenance Specialist	Heavy and Tractor-Trailer Truck Drivers
Business Analysts	Electricians	Nursing Assistants	Machinist	Light Truck or Delivery Service Drivers
Software Engineers	Painters, Construction and Maintenance	Childcare Workers	Engineers - Process/Manufacturing	Industrial Truck and Tractor Operators
Software Developers, Applications	Plumbers, Pipefitters, and Steamfitters	Medical Assistants	Machine Tool Operator	Stock, Shipping, and Receiving Clerks
Systems Analysts	Supervisors of Construction and Extraction Workers	Licensed Practical and Licensed Vocational Nurses	Inspectors, Testers, Sorters, Samplers, and Weighers	First-Line Supervisors
Operations Managers	Construction Managers	Healthcare Managers	Welders	Postal Service Mail Carriers
Clerks	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Social Workers	First-Line Supervisors of Production and Operating Workers	Captains, Mates, and Pilot of Vessels
Software Engineers	Operating Engineers and Other Construction Equipment Operators	Medical Secretaries	Manufacturing Managers	Cargo and Freight Agents
Sales Representatives	General and Operations Managers	Physicians and Surgeons, All Other	Engineers - Design	Bus Drivers
Software Developers, Systems Software	Electrical Power-Line Installers and Repairers	Physical Therapists	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Dispatchers, Except Police and Ambulance
Marketing Representatives	Cost Estimators	Dental Assistants	Food Batchmakers	General and Operations Managers
Legal Assistants	Roofers	Social and Human Service Assistants	Production, Planning, and Expediting Clerks	Bus and Truck Mechanics and Engine Repairers
IT Support Specialists	Cement Masons and Concrete Finishers	Emergency Medical Technicians and Paramedics	Purchasing Agents, Except Wholesale, Retail, and Farm Products	Sailors and Marine Oilers
Research Analysts and Marketing	Heavy and Tractor-Trailer Truck Drivers	First-Line Supervisors of Office and Administrative Support Workers	Shipping, Receiving, and Traffic Clerks	Maintenance and Repair Workers, General
Engineers	Welders, Cutters, Solderers, and Brazers	Nurse Practitioners	Heavy and Tractor-Trailer Truck Drivers	Aircraft Mechanics and Service Technicians
Technologists and Technicians	Sheet Metal Workers	Medical Records and Health Information Technicians	Slaughterers and Meat Packers	Machine Feeders and Offenders
Software Engineers	Telecommunications Line Installers and Repairers	Mental Health Counselors	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	Transportation, Storage, and Distribution Managers
Information Systems	Brickmasons and Blockmasons	Medical and Clinical Laboratory Technologists	Meat, Poultry, and Fish Cutters and Trimmers	Airline Pilots, Copilots, and Flight Engineers
Software Engineers	First-Line Supervisors of Mechanics, Installers, and Repairers	Family and General Practitioners	Metal-Refining Furnace Operators and Tenders	Reservation and Transportation Agents and Travel Clerks
*Top 20 Occupations based on the Forecasted Number of Growth and Replacement job openings over the next 5 years. Occupations not industry specific were removed.				
Support Sectors				
Retail Trade	Educational Services	Public Administration	Government	Accommodation and Food Services
Arts and Culture (West Region)	Entrepreneurship	Media and Visual Arts (West Region)	Energy	

Automotive Technology

Pathways

Automotive Maintenance and Light Repair (AMLR) CIP 47.0604.01

This program prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. Courses include instruction in brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drive trains, and heating and air condition systems.

Automotive Engineering CIP 15.0803.00

This pathway provides the opportunity to blend Career & Technical Education (CTE) courses with Project Lead the Way (PLTW) courses to help students apply technical skills along with science, technology, engineering, and math (STEM) skills to solve real-world problems. A program that prepares individuals to apply basic 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. Courses include 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.

Courses Description in Automotive Pathways

Automotive Maintenance and Light Repair Section A 470507 These courses introduce the student to the principles, theories, and concepts of Automotive Technology and include instruction in the maintenance and light repair of Engines, Brake Systems, Electrical/Electronic Systems, Suspension and Steering Systems, Automatic and Manual Transmission/Transaxles, and Engine Performance Systems. In all areas, appropriate theory, safety, and support instruction will be taught and required for performing each task, including proper care and cleaning of customers' vehicles. The instruction will also include identification and use of appropriate tools and test/measurement equipment required to accomplish certain tasks. The student will also receive the necessary training to locate and use current reference and training materials from accepted industry publications and resources and demonstrate the ability to write work orders. Courses A, B, C, and D can be completed in any sequence.

Automotive Maintenance and Light Repair Section B 470509 The entire description and all Tasks/Standards for the Automotive Maintenance and Light Repair Sections A, B, C, and D are listed in the Automotive Maintenance and Light Repair Section A. Courses and Standards/Tasks in A, B, C and D can be completed in any sequence.

Automotive Maintenance and Light Repair Section C 470511 The entire description and all Tasks/Standards for the Automotive Maintenance and Light Repair Sections A, B, C, and D are listed in the Automotive Maintenance and Light Repair Section A. Courses and Standards/Tasks in A, B, C and D can be completed in any sequence.

Automotive Maintenance and Light Repair Section D 470513 The entire description and all Tasks/Standards for the Automotive Maintenance and Light Repair Sections A, B, C, and D are listed in the Automotive Maintenance and Light Repair Section A. Courses and Standards/Tasks in A, B, C and D can be completed in any sequence.

Co-op I (Auto) 470501 Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students who participate in the Cooperative Education program receive compensation for their work.

Prerequisite: Consent of Instructor

Special Problems I (Auto) 470577 This course is designed to enhance a student's understanding of shop situations and problems that arise when dealing with live work. It expands on the task lists that have already been taught to the student in previous Auto courses. The instructor will teach students how to deal with real world problems that arise when repairing automobiles subjected to various types of customer road use. **Prerequisites: Completion of the Automotive Maintenance and Light Repair Courses/Sections A, B, C and D.**

Automotive Technology & Automotive Engineering Pathways Possible Course Sequence

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Auto Maintenance & Light Repair-A (AMLR)	Individual Agreement with KCTCS	
9	Introduction to Engineering Design (PLTW)		
10	AMLR- B	Individual Agreement with KCTCS	
11	AMLR- C	Individual Agreement with KCTCS	
12	AMLR- D	Individual Agreement with KCTCS	
12	Digital Electronics (PLTW)		
<i>AMLR courses can be taken in ANY order</i>		Total College Credits Earned	
Additional Courses			
Special Problems I			
Work-Based Learning Placement			
Career Certificates that can be earned			
Student ASE Certificate			
Careers related to this Pathway			
Brake Technician		Entry-Level Technician	
Front End Technician		Auto Technician	
Service Adviser/ Writer		Auto Shop Foreman	
Service Manager Dispatcher			
This is only an example of how a student could complete this pathway.			

AIR CONDITIONING TECHNOLOGY

Environmental Control System Technician CIP 47.0201.05

This pathway prepares individuals to apply technical knowledge and skills to repair, install, service and maintain the operating condition of heating, air conditioning, and refrigeration systems. The pathway includes instruction in diagnostic techniques, the use of testing equipment and the principles of mechanics, electricity, and electronics as they relate to the repair of heating, air conditioning and refrigeration systems.

Course Description's in Air conditioning Technology

Refrigeration Fundamentals 460828 1 Credit This course introduces the fundamentals of refrigeration, refrigeration terms, and the basic refrigeration cycle. Proper use of tools, test equipment, and materials is stressed. Environmental issues including refrigerant handling are discussed. Refrigerant piping and methods used to join them are taught. General and specific safety is emphasized.

HVAC Electricity 460817 1 Credit This course introduces students to the basic physics of electricity. Students apply Ohm's Law; measure resistance, voltage, ohms, watts and amps; construct various types of electrical circuits; select wire and fuse sizes; and learn to troubleshoot an electric motor and motor controls.

Electrical Components 460826 1 Credit This course defines the electrical components of an air conditioning system. Different types of line voltages, wiring diagrams, and solid-state devices are included. Safety is emphasized.

Heating and Humidification 460820 1 Credit This course explains heating systems from simple fossil fuel furnaces through more complex systems. This course will also concentrate on the line and control voltage circuitry pertaining to these systems. ARI Controls; Subtopics A-C; Heating Systems: Subtopics A-C; System Installation and Start-Up: Subtopics A and B; System Servicing and Troubleshooting: Subtopic C; Tools and Equipment: Subtopic D.

Co-Op (Air Conditioning) 460880 Co-op I 1 Credit provides supervised, on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. **Prerequisite: Consent of Instructor** Prerequisite-

Environmental Control System Technician (HVAC)			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9 th	Refrigeration Fundamentals	N/A	0
10 th	HVAC Electricity	N/A	0
11 th	Heating and Humidification	N/A	0
12 th	Electrical Components	N/A	0
Total College Credits Earned			0
Additional Courses Offered			
HVAC Co-op Work-Based Learning Placement			
Industry Certifications			
Kentucky Journeyman HVAC Mechanic Exam			
Kentucky Journeyman HVAC Mechanic” exam. After successful completion of the exam, the student will attain 750 hours of the 3000 hours of “On the Job Training (OJT) required by regulation 815 KAR 8:030 Section 3.			
Careers Related to this Pathway			
Sales Associate		Air Conditioning Technician	
Wind Turbine Technician		HVAC Installer	
Refrigeration Technician		Air Conditioning Engineer	
This is only an example of how a student could complete this pathway.			

Health Sciences

(All courses in the Health Sciences section are approved Science elective credits)

Allied Health CIP 51.0000.01

This program is a general, introductory, undifferentiated, or joint program in health services occupations that prepares individuals for either entry into specialized training programs or for a variety of concentrations in the allied health area. Courses include instruction in the basic sciences, research and clinical procedures, and aspects of the subject matter related to various health occupations.

Pre-Nursing CIP 51.2699.01

This program prepares individuals for admission to a professional program in Nursing. Upon passing this class, students will be eligible to sit for the State Registered Nurse Aide (SRNA) exam. Most state and national nursing programs require students to have successfully passed the SRNA exam prior to admission to nursing school.

Pharmacy Technician CIP 51.0805.01

This program prepares individuals, under the supervision of pharmacists, to prepare medications, provide medications and related assistance to patients, and manage pharmacy clinical and business operations. Courses include instruction in medical and pharmaceutical terminology, principles of pharmacology and pharmaceutics, drug identification, pharmacy laboratory procedures, prescription interpretation, patient communication and education, safety procedures, record-keeping, measurement and testing techniques, pharmacy business operations, prescription preparation, logistics and dispensing operations, and applicable standards and regulations. Students will have the opportunity to earn their Kentucky License to be a certified Pharmacy Technician.

Medical Administrative Assisting CIP 51.0710.00

This pathway prepares individuals, under the supervision of office managers and other professionals, to perform routine administrative duties in a medical, clinical, or health care facility/system office environment. Includes instruction in general office skills, data processing, office equipment operation, principles of medical record-keeping and business regulations, medical/clinical office procedures, and communications skills.

Course Description's for Health Sciences

Principles of Health Science 170111 Principles of Health Science is an orientation and foundation for occupations and functions in any health care profession. The course includes broad health care core standards that specify the knowledge and skills needed by the vast majority of health care workers. The course focuses on exploring health career options, history of health care, ethical and legal responsibilities, leadership development, safety concepts, health care systems and processes, and basic health care industry skills. This introductory course may be a prerequisite for additional courses in the Health Science program.

Emergency Procedures/ CPR 170141 ½ Credit This course will focus on potential emergency situations. It is designed to promote an understanding of standard precautions necessary for personal and professional health maintenance and infection control. Upon successful completion of the course, the student will demonstrate the necessary skills in First Aid and Cardiopulmonary Resuscitation (CPR) and will be given the opportunity to take the completion examination as outlined by the sponsoring agency.

Medical Terminology 170131 ½ Credit Medical Terminology is designed to develop a working knowledge of language in all health science major areas. Students acquire word-building skills by learning prefixes, suffixes, roots and abbreviations. Students will learn correct pronunciation, spelling, and application rules. By relating terms to body systems, students identify proper use of words in a medical environment. Knowledge of medical terminology enhances the student's ability to successfully secure employment or pursue advanced education in health care.

Medicaid Nurse Aide 170631 1 Credit This course is an instructional program that prepares individuals to perform routine nursing related services to patients in long-term care facilities under the training and supervision of an approved registered nurse. State Registry is available upon successful completion of state written and performance examination. Prior to offering this course, the instructor and health science program must be approved for meeting state requirements set by the Cabinet for Health and Family Services.

Body Structures and Functions 170167 1 Credit Body Structures and Functions is designed to provide knowledge of the structure and function of the human body with an emphasis on normalcy. The interactions of all body systems in maintaining homeostasis will promote an understanding of the basic human needs necessary for health maintenance. Academic knowledge from life science core content as it relates to the human body will be included. Laboratory activities should be a part of the course when appropriate.

Medical Math 170169 1 Credit This course is designed for students who have completed courses containing all the required high school Kentucky Academic Standards (KAS) for Mathematics. If students have not completed courses containing all the required KAS for Mathematics, a Medical Math course should attend to standards students still need. This course is designed to focus, utilize and build on mathematical skills commonly used in all health occupations. Students will use applied techniques, problem-solving and critical thinking to perform mathematical operations such as computations, ratio and proportion, weights and measurements and conversions, beyond what was addressed in the student's foundational courses. A Medical Math course may include, but is not limited to, topics found in the (+) standards of the KAS for Mathematics. This course is strongly recommended for all Health Science majors. Successful completion of Algebra I is suggested prior to enrolling in this course. Leadership development will be provided through the HOSA student organization.

Allied Health Core Skills 170501 1 Credit Allied Health Core Skills is designed to provide knowledge, concepts and psychomotor skills necessary for gainful employment as an entry-level health care worker. Assisting students in selecting a career major, classroom instruction and educational objectives are combined with learning experiences, observations, and a work-based learning opportunity such as internship, shadowing, or clinical rotation. This course is designed for students not enrolled in the Medicaid Nurse Aide program or the Patient Care Technician program.

Medical Office Procedures 170920 This course provides a working knowledge of the duties required in a medical office. It includes professional and career responsibilities, interpersonal communication, administrative responsibilities, and financial administration.

Internship: Medical Administrative Assistant 170922 Internship for CTE (Career and Technical Education) courses provides supervised work site experience for high school students who have completed courses leading to a career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. Students receiving pay for intern experience are those participating in an experience that is a semester or longer and have an established employee-employer relationship. A non-paid internship affects those students who participate on a short-term basis. Prerequisites: Principles of Health Science 170111 AND Medical Terminology 170131 AND Emergency Procedures 170141

CIP 51.0710.00

Medical Administrative Assisting CIP 51.0710.00			
Grade	High School Course	Equivalent College Course	College Credit HRS
9	Principles of Health Science	AHS 105	3
10	Medical Term/ Emergency Procedures	AHS 115/KHP 190	3/3
11	Medical Office Procedures	MIT 217	3
12	Internship: Medical Administrative Assistant		
Industry Certificates that can be earned:			
NHA Certified Medical Administrative Assistant (CMAA)			
NHA Billing and Coding Specialist (CBCS)			
<u>Careers Related to this Pathway</u>			
Unit Secretary		Medical Office Assistant	
Patient Coordinator		Admissions Coordinator	
This is only an example of how a student can complete this pathway			

Pre-Nursing/Allied Health/ Pharmacy Tech Pathways

Course Sequence Example

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Principles of Health Science	AHS 105	3
10	Medical Term/ Emergency Procedures	AHS 115/KHP 190	3/3
11	Body Structures & Functions	AHS 109	3
12	Medicaid Nurse Aide	NAA 100	3
12	Pharmacy Technician		
12	Allied Health Core Skills		
Total College Credits Earned			12
Additional Courses			
Medical Math			
Work-Based Learning Placement			
Industry Certificates that can be earned:			
American Heart Association Certification in CPR (BLS) and First Aid			
State Registered Nurse Aide (SRNA)			
NOCTI- Health Care Core			
Pharmacy Technician Certification (ExCPT)			
Careers related to this Pathway			
Certified Nurse Assistant		Registered Nurse	
Clinical Medical Assistant		Laboratory Technician/ Assistant	
Dietician/Dietary Assistant		Physician Assistant	
Home Health Assistant		EMT/ Paramedic	
Licensed Practical Nurse		Dental Hygienist/ Assistant	
Occupational Therapist/Assistant		Speech Therapist/ Assistant	
Radiology Technician		Surgical Technician	
Respiratory Therapist/Assistant		Physical Therapist/Assistant	
Veterinarian		Pharmacist/Pharmacy Technician	
Physician		General Medicine	
This is only an example of how a student could complete this pathway.			

Computer Science

Web Development/ Administration Pathway 11.0801.01

Careers in Web and Digital Communications involve creating, designing and producing interactive multimedia products and services, including development of digitally-generated or computer-enhanced media used in business, training, entertainment, communications and marketing. Organizations of all types and sizes use digital media (the World Wide Web, CD-ROM, DVD) to communicate with existing and potential customers, to track transactions, and to collaborate with colleagues. Web and digital communications experts can find employment opportunities in organizations of all sizes and types, doing work such as creating e-business auction Web sites that allow people around the world to buy and sell items in real-time. The expanding integration of Internet technologies into businesses has resulted in strong employment growth in the Web and Digital Communications pathway.

Network Administration Pathway CIP 11.0901.01

HCATC students have several routes to becoming Career Ready. For one, students who earn approved industry certifications in their program or score at or above the benchmark on the Career and Technical Education End-of-Program Assessment for articulated credit will be recognized as Career Ready. Another possibility is to complete two (2) Dual Credit approved courses in a pathway with a grade of B or higher. Also, students that complete an approved apprenticeship will be considered Career Ready. Honor cords will be awarded to all students who become Career Ready.

Computer Programming CIP-11.0201.01

The Computer Programming pathway courses will prepare students to design and create apps, as well as troubleshoot the latest programming languages used in industry. The coursework will include instruction in the principles of Computational science, Computer development and Computer Programming. Upon completion of this career pathway, students will be prepared for an entry level position or continue their education in Computer Programming.

Course Description's Computer Science

Web Page Development 110801 This course introduces web pages through the use of HTML and CSS. Students use text and/or web editors to create web documents with various formats and page layouts, multimedia, tables and forms. Instruction emphasizes W3C web design and accessibility standards. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Internet Technologies 110917 This course provides students with a study of traditional and emerging Internet technologies. Also covered are other topics including Internet fundamentals, Internet applications, Internet delivery systems, and Internet client/server computing. Internet Technologies provides a hands on experience and some rudimentary programming in an Internet environment. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Computer Literacy 110110 This course provides an introduction to the computer and the convergence of technology as used in today's global environment. Introduces topics including computer hardware and software, file management, the Internet, e-mail, the social web, green computing, security and computer ethics. Instruction presents basic use of application, programming, systems, and utility software. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Introduction to Networking Concepts 110901 This course introduces technical level concepts of non-vendor specific networking including technologies, media, topologies, devices, management tools, and security. Provides the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Introduction to Programming 110201 This course focuses on the general writing and implementation of generic and atomized programs to drive operating systems. Instruction includes software design, languages, and program writing, and troubleshooting. Students are introduced to fundamental programming concepts using an industry-specific or emerging programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, information and file processing, and uniqueness of the language used in the course. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Network Hardware Installation and Troubleshooting 110906 This course is designed to provide students with the knowledge and skills necessary to design, install, configure, and troubleshoot cabling systems and equipment used to connect a local area network. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Computer Hardware and Software Maintenance 110101 This course presents a practical view of computer hardware and client operating systems. It also covers computer hardware components; troubleshooting, repair, and maintenance; operating system interfaces and management tools; networking components; computer security; and operating procedures. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Computer Science Internship 110919 Internship for CTE Courses provide supervised work-site experience for high school students who are enrolled in a course associated with their identified career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. A student receiving pay for an intern experience is one who is participating in an experience that lasts a semester of longer and has an established employee-employer relationship. A non-paid internship affects those students who participate on a short-term basis (semester or less). All information references to the Work Based Learning Manual. Students spend at least 20 hours of programming and applying learned concepts through programming. (Programming is defined, by the K-12 CS Framework, as the craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.)

Web Development/ Administration Pathway Possible Course Sequence			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	110110 Computer Literacy *	CIT 105	3
10	110801Web Page Development*	CIT 155	3
11	110804 Web Site Design and Dev. *	CIT 157	3
12	110805 Graphic Design		
Total College Credits Earned			9
Additional Courses			
Work Based Learning Placement			
Career Certificates that can be earned			
End of Program Assessment – Web Development			
Certiport Digital Literacy IC3			
Microsoft Technology Associate: Intro to Programming Using HTML & CSS			
Careers related to this Pathway			
Web Designer		Webmaster	
Graphic Design		Web Administration	
Web Production		Web Developer	
Project Management		Content Development	
This is only an example of how a student could complete this pathway.			

Network Administration Pathway Possible Course Sequence

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	110110 Computer Literacy*	CIT 105	3
10	110101 Comp. Hardware & Software Maint.*	CIT 111	3
11	110901 Intro to Networking Concepts*	CIT 160	3
12	110906 Network Hardware Installation		
Total College Credits Earned			9
Additional Courses			
Work Based Learning Placement			
Career Certificates that can be earned			
End of Program Assessment – Networking			
Certiport Digital Literacy IC3			
Microsoft Technology Associate: Network Fundamentals			
Careers related to this Pathway			
Network Administrator		Telecommunications	
Computer Tech Support		Software Engineer	
Database Administrator		Network Security Specialist	
Health Informatics		System Analyst	
This is only an example of how a student could complete this pathway.			

Computer Programming Possible Course Sequence

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	110110 Computer Literacy*	CIT 105	3
10	110801Web Page Development*	CIT 155	3
11	110201 Introduction to Programming		
12	110701 AP Computer Science A		
Total College Credits Earned			6
Additional Courses			
Work Based Learning Placement			
Career Certificates that can be earned			
Microsoft Technology Associate: Intro to Programming Using HTML & CSS			
Certiport Digital Literacy IC3			
Careers related to this Pathway			
Software application developer		Web developer	
Computer systems engineer		Computer systems analyst	
Database Administrator		Computer programmer	
This is only an example of how a student could complete this pathway.			

Computerized Manufacturing & Machining

(Machine Tool Technology)

Machinist Operator/ CNC Operator CIP 48.0503.04

These pathways prepare students to set up and operate a variety of machine tools, such as lathes, milling machines, and grinders, to produce precision metal parts, instruments, and tools. These tools are either manually controlled or computer-numerically controlled (CNC). Machinist Technicians must be able to read blueprints, align and adjust cutting tools and inspect the finished product to meet customer specifications.

Computerized Manufacturing & Machining (CMM) Engineering CIP 48.0510.00

This pathway provides the opportunity to blend Career & Technical Education (CTE) courses with Project Lead the Way (PLTW) courses to help students apply technical skills along with science, technology, engineering, and math (STEM) skills to solve real-world problems. CMM Engineers design, develop and run programs which direct machines to cut and shape metal or plastic for such things as airplanes, automobiles and other industrial machines. CMM Engineers use blueprints and 3- dimensional computer designs to create the programs which result in precisely cut products.

Machinist Operator CIP 48.0503.02 Machine operators are responsible for producing precision machined parts. They measure parts with precision tools in order to make sure certain parts meet pre-determined quality and cosmetic standards. When parts have passed inspection, the parts go on to the next phase of production. Machine operators are expected to meet production quotas. The level of documentation required varies, depending on the degree of precision needed for the finished product. Machine operators also need to keep track of the number of units that are scrapped due to various errors.

Course Description's Computerized Manufacturing & Machining

Fundamentals of Machine Tools – A 470913 This course provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered include shop safety, bench work, drill press, power saw, measurement, mills, and lathes.

Fundamentals of Machine Tools – B 470914 This course provides intermediate skill development in machine tool technology. The course builds on basic skills especially in the calculation of safe cutting speed and feed rates for the drill press, power saw, mills, and lathes. Shop safety, bench work, and precision measurement are also emphasized.

Manual Programming 470915 This course introduces the student to CNC format and the Cartesian Coordinate System. It also introduces the student to CNC codes and programming, set-up, and operation of CNC machine tools. The student will utilize process planning and manual programming for CNC equipment. The student will load a CNC program and set tool and work offsets.

CAD/CAM/CNC 470925 This course introduces the student to CAD/CAM/CNC systems which includes CAM software. The student will utilize process planning, manual programming and CAD/CAM for CNC equipment. The student will load a CNC program and set tool and work offsets and machine part.

Blueprint Reading for Machinists 470921 This course provides the student with a beginning and advanced series of lectures, demonstrations, and practice exercises in the study of prints. Safety will be emphasized as an integral part of this course.

Introduction to 3D Printing Technology 332001 An introduction to additive rapid prototyping manufacturing (three-dimensional printing), and its applications in conjunction with computer technology, including hardware, software, three-dimensional printing technology, file management, internet, security, and computer intellectual property ethics. Presents basic use of applications, programing, systems and utility software.

Machinist Assistant Pathway Course Sequence Example			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Blueprint Reading for Machinist	BRX 112	4
10	Fundamentals of Machining A	CMM 110	3
11	Fundamentals of Machining B	CMM 112	3
12	Applied Machining I	CMM 134	6
Total College Credits Earned			16
Additional Courses			
Introduction to 3D Printing Technology			
Manual Programming			
CAD/CAM/CNC			
Industry Certificates that can be earned			
National Institute for Metalworking Skills (NIMS)			
OSHA 10 Card			
Careers related to this Pathway			
Industrial Maintenance		Welding	
CAD		Engineering	
This is only an <u>example</u> of how a student could complete this pathway.			

CMM Engineering Pathway Course Sequence Example			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	219901 Intro to Engineering Design (PLTW)		
10	Fundamentals of Machining A	CMM 110	3
11	Fundamentals of Machining B	CMM 112	4
12	470915 Manual Programming	CMM 130	3
12	219904 Comp Integrated Manufacturing (PLTW)		
Total College Credits Earned			10
Industry Certificates that can be earned			
REC- Foundation of Pre-Engineering Certification			
OSHA 10 Card			
Careers related to this Pathway			
Mechanical/ Industrial Engineer		Machinist Technician	
Quality Control Manager		CNC Machine Operator/ Programmer	
Maintenance Machinist		Machinist	
This is only an example of how a student could complete this pathway.			

Business Education

Management/ Entrepreneurship CIP 52.0701.00

This program prepares individuals to plan, organize, direct, and control the functions and processes of a business. Courses include instruction in management, business law, digital literacy with all forms of presentation for marketing, marketing for all businesses and self as well, financial literacy to understand how financial behavior will be reflected through all of life's choices and one of the best entrepreneurship programs in the state. In this course students are starting actual businesses and understanding the concept of start-up, marketing, and profit from a hands-on perspective. This is accomplished through collaboration with the HEAT (Harrison-Cynthiana Entrepreneurship Assistance) team and the Economic Development Authority.

Course Description Business Education

Digital Literacy 060112 Students will use a computer and application software including word processing, presentation, database, spreadsheet, internet, and email to prepare elementary documents and reports. The impact of computers on society and ethical issues are presented. Leadership development will be provided through FBLA and/or DECA.

Business and Marketing Essentials 060111 Business and Marketing Essentials is an introductory business and marketing course which enables students to acquire a realistic understanding of business processes and activities. Students examine fundamental economic concepts, the business environment, and primary business activities. They develop an understanding of and skills in such areas as customer relations, economics, emotional intelligence, financial analysis, human resources management, information management, marketing, operations, professional development, and strategic management. Throughout the course, students are presented ethical dilemmas and problem solving situations for which they must apply academic and critical-thinking skills. Leadership development will be provided through FBLA and/or DECA.

Introduction to Business Management 060411 Introduction to Management expands student understanding of management. It exposes students to several types of management, including customer relationship management, human resources management, knowledge management, information management, project management, quality management, risk management, and strategic management. Business law, communication skills, economics, operations, and professional development are also stressed throughout the course. Current technology will be used to acquire information and to complete activities. Throughout the course, students are presented ethical dilemmas and problem-solving situations for which they must apply academic and critical-thinking skills. Leadership development will be provided through FBLA and/or DECA.

Personal Finance (CTE Credit) 060170 The goal of the Personal Finance course is to help students to become financially responsible, conscientious members of society. To that end, this course develops student understanding and skills in such areas as money management, budgeting, financial goal attainment, the wise use of credit, insurance, investments, and consumer rights and responsibilities. Throughout the course, students also examine contemporary, real-world ethical dilemmas that individuals commonly encounter when managing their personal finances. Leadership development will be provided through FBLA and/or DECA.

Advanced Accounting 070125 This course uses an integrated approach to teach accounting. Students first learn how businesses plan for and evaluate their operating, financing, and investing decisions and how accounting systems gather and provide data to internal and external decision makers. This year-long course covers all the learning objectives of a traditional college level financial accounting course, plus those from a managerial accounting course. Topics include an introduction to accounting, accounting information systems, time value of money, accounting for merchandising firms, sales and receivables, fixed assets, debt, and equity. Other topics include statement of cash flows, financial ratios, cost-volume profit analysis, and variance analysis. Leadership development will be provided through FBLA and/or DECA. Teachers must go through a three-day training to teach this course.

Principles of Entrepreneurship 080310 Principles of Entrepreneurship introduces students to a wide array of entrepreneurial concepts and skills, including the role of entrepreneurship in our economy, entrepreneurial discovery processes, ideation, and preliminary start-up venture planning. Students also develop an appreciation for marketing's pivotal role in the development and success of a new business. They become acquainted with channel management, pricing, product/service management, and promotion. Students conduct thorough market planning for their ventures:

selecting target markets; conducting market, SWOT, and competitive analyses; forecasting sales; setting marketing goals and objectives; selecting marketing metrics; and setting a marketing budget. The capstone activity in the course is the development of detailed marketing plans for students' startup businesses. Throughout the course, students are presented ethical dilemmas and problem solving situations for which they must apply academic and critical-thinking skills. Leadership development will be provided through FBLA and/or DECA. **Suggested Prerequisite: Marketing Principles 080716 OR Business and Marketing Essentials 060111**

Ethical Leadership 060109 Ethical Leadership is a principles-based ethics course introducing students to key leadership and ethical knowledge and skills, including integrity, trust, accountability, transparency, fairness, respect, rule of law, and viability. Throughout the course, students apply ethical principles to contemporary, real-world situations that teens and young adults often encounter in school, at home, with friends, and in entry-level job positions. They examine the concept of ethical leadership and strengthen their leadership and ethical decision-making skills through the planning, implementation, and evaluation of at least one class service-learning project. Leadership development will be provided through FBLA and/or DECA.

Business Education Internship 060108 Internship for CTE (Career and Technical Education) courses provides supervised work-site experience for high school students who are enrolled in a pathway course associated with their identified career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. A student receiving pay for an intern experience is one who is participating in an experience that lasts a semester or longer and has an established employee employer relationship. A non-paid internship affects those students who participate on a short term basis (semester or less). All information referenced to the Work Based Learning Manual. Leadership development will be provided through FBLA and/or DECA.

Business Management Pathway Possible Course Sequence			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Digital Literacy	OST 105	3
10	Business Management/ Principles of Marketing		
11	Financial Literacy	BAS 120	3
12	Entrepreneurship	BAS 170	3
Total College Credits Earned			9
Additional Courses			
Accounting & Finance Foundations			
Business Law			
Medical Office Procedures			
Work-Based Learning Placement			
Career Certificates that can be earned			
End of Program Assessment – Business Management			
Assessment of Skills & Knowledge of Business (ASK)- Fundamental Business Concepts			
Careers related to this Pathway			
Entry Level Manager		Bank Manager	
Bookkeeper		Entry-Level Manager	
Account Manager		Real Estate Agent	
Venture Capitalist		Insurance Agent	
This is only an <u>example</u> of how a student could complete this pathway.			

Welding Technology

Entry Level Welder CIP 48.0508.01 The pathway teaches students to demonstrate the ability to assist lead welders in the fabrication of steel and metal structures. Students must be adept at performing basic welding functions and calculating dimensions as well as operating power equipment, grinders and other related tools. Students MUST be proficient in reading and interpreting basic blueprints and following work procedure specifications (WPS).

Welding Engineering CIP This pathway provides the opportunity to blend Career & Technical Education (CTE) courses with Project Lead the Way (PLTW) courses to help students apply technical skills along with science, technology, engineering, and math (STEM) skills to solve real-world problems. This program prepares students to design and develop metal components for products for the pipeline, automotive, boiler making, ship building, aircraft and mobile home industry.

Skilled Trades Welding TRACK Pre-Apprenticeship CIP 48.0508.99 The Welding Skilled Trades TRACK is designed as a pre-apprenticeship pathway for students to have the opportunity to enter a postsecondary Registered Apprenticeship training program after graduation while still potentially earning credit for classes taken that relate to the apprenticeship. Students must successfully complete the four-course sequence, pass the TRACK end-of-program assessment and 3G performance exam. In addition, students must either complete eight eTraining - KYSafe Training (click on green TRACK tab and complete the 8 pre-selected modules) or attain the OSHA 10 or 30 card. Student is to be enrolled in the pathway in TEDS and adhere to deadlines for TEDS and for CTE End of Program (EOP) assessments. Upon completion, the student will receive a pre-apprenticeship industry certification issued by the Kentucky Office of Apprenticeship by submitting a transcript and this form: Skilled Trades Completion Form. This certification will be recognized by participating partners for an interview and possible credit upon acceptance. Credit is at the discretion of the training organization. For more information or a list of participating organizations, please visit the Welding TRACK website.

Course Description Welding Technology

Shielded Metal Arc Welding (SMAW) and Lab 480521 Students learn the identification, inspection, and maintenance of SMAW electrodes; principles of SMAW; the effects of variables on the SMAW process to weld plate and pipe; and metallurgy.

Gas Metal Arc Welding and Lab 480522 This course covers identification, inspection, and maintenance of GMAW machines; identification, selection and storage of GMAW electrodes; principles of GMAW; and the effects of variables on the GMAW process. Theory and applications of related processes such as FCAW, SMAW, and metallurgy are also included. Students learn the practical application and manipulative skills of Gas Metal Arc Welding and the proper safety situations needed in this process. Both ferrous and non-ferrous metals will be covered, as well as various joint designs on plate in all positions.

Gas Tungsten Arc Welding and Lab 480525 This course covers identification, inspection, and maintenance of GTAW machines; identification, selection and storage of GTAW electrodes; principles of GTAW; effects of variables on the GTAW process; and metallurgy. This course also teaches the theory and application of Plasma Arc Cutting.

Basic Welding A and Lab 480524 ½ credit Students are introduced to welding, cutting processes, and related equipment. Basic setup, operation, and related safety are applied.

Basic Blueprint Reading 499920 ½ credit This course presents basic applied math, lines, multi-view drawings, symbols, various schematics and diagrams, dimensioning techniques, sectional views, auxiliary views, threads and fasteners, and sketching typical to all shop drawings. Safety will be emphasized as an integral part of the course.

Cutting Processes and Lab 480501 Students will obtain a working knowledge of various cutting processes used by the welding industry. Skills will include but are not limited to safety; theory of operation; setup and operating techniques; troubleshooting; making minor equipment repairs; terms and definitions; identification; evaluation; and repair and prevention of discontinuities of cut surfaces. Also included are oxy-fuel cutting, plasma arc cutting, exothermic cutting, air carbon arc cutting, shielded metal arc cutting, and mechanical cutting processes.

SMAW Groove Welds with Backing Lab 480528 Students will acquire the manipulative skills to do groove welds in all positions with backing. Prerequisites: Shielded Metal Arc Welding (SMAW) and Lab 480521 OR Consent of Instructor

Internship (Welding) 480544 The internship provides supervised on-the-job work experience related to the students' education objectives. Students participating in the practicum do not receive compensation. Prerequisite: Consent of Instructor

Welder- Entry Level Pathway Course Sequence Example			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Basic Welding/ Basic Blueprint Reading	BRX 120	3
10	Cutting Processes	WLD 110/ WLD 111	2/3
11	Shielded Metal Arc Welding & Lab (SMAW)	WLD 120/ WLD 121	2/3
12	Gas Metal Arc Welding (GMAW)	WLD 140/ WLD 141	2/3
Total College Credits Earned			15
Additional Courses			
	Gas Tungsten Arc Welding		
Industry Certificates that can be earned			
AWS- 2F Certification			
DOT 3-G Certification			
OSHA 10 Card			
Careers related to this Pathway			
Welder Helper/ Tack Welder (With 2F Cert.)		Boilermaker	
Production Welder (With DOT Cert.)		Pipefitter	
Entry Level Welder (With DOT Cert.)		Engineer	
This is only an example of how a student could complete this pathway.			

Welding Engineering Pathway Course Sequence Example			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Introduction to Engineering Design (PLTW)		
10	Blueprint Reading for Welding	BRX 120	3
11	Cutting Processes	WLD 110/ WLD 111	2/3
12	Gas Metal Arc Welding	WLD 140/ WLD 141	2/3
12	Principles of Engineering (PLTW)		
Total College Credits Earned			10
Industry Certificates that can be earned			
OSHA 10 Card			
REC- Foundation of Pre-Engineering Certification			
Careers related to this Pathway			
Pipe Welder		Certified Welding Inspector (CWI)	
Certified Welding Educator (CWE)		Welding Engineer	
Structural Engineer		Mechanical Engineer	
Electrical Engineer			
This is only an example of how a student could complete this pathway.			

Skilled Trades Welding TRACK Pre-Apprenticeship

Grade	High School Course	Equivalent College Course	College Credit Hrs
	Cutting Processes and Lab	WLD 110/111	2/3
	Gas Metal Arc Welding and Lab	WLD 140/141	2/3
	Shielded Metal Arc Welding (SMAW) and Lab	WLD 120/121	2/3
	SMAW Groove Welds with Backing Lab		
Industry Certifications			
Pre-apprenticeship industry certification issued by the Kentucky Office of Apprenticeship			
*Please see details in pathway description above for further requirements to completing this pathway			

Advanced Manufacturing Technology

Electrical Technician

Students in this program will apply electrical theory and related knowledge to diagnose and modify developmental or operational electrical machinery and electrical control equipment and circuitry in industrial or commercial plants and laboratories: Assembles and tests experimental motor-control devices, switch panels, transformers, generator windings, solenoids, and other electrical equipment and components according to engineering data and knowledge of electrical principles.

Maintenance Mechanic

This pathway prepares students to perform machine setup, troubleshooting, repairs and preventive maintenance service; including but not limited to, mechanical, electrical, pneumatic and hydraulic systems for industrial production and processing machinery and equipment. Reads and interprets equipment manuals and work orders to perform required maintenance and service. Analyses and inspects equipment, structures, or materials to identify the cause of errors or other problems or defects.

Electrical Engineering

This pathway provides the opportunity to blend Career & Technical Education (CTE) courses with Project Lead the Way (PLTW) courses to help students apply technical skills along with science, technology, engineering, and math (STEM) skills to solve real-world problems. Electrical Engineers apply electrical theory and related knowledge to diagnose and modify developmental or operational electrical machinery and electrical control equipment and circuitry in industrial or commercial plants and laboratories. Electrical Engineers experiment with motor-control devices, switch panels, transformers, generator windings, solenoids, and other electrical equipment and components according to engineering data and knowledge of electrical principles.

Course Description Advanced Manufacturing Technology

Maintaining Industrial Equipment 470318 This course is designed to introduce the student to maintenance techniques and procedures used to maintain industrial equipment.

Industrial Maintenance of Programmable Logic Controls 470330 This course includes the theory of Programmable Logic Controllers to include installation, programming, interfacing, and troubleshooting PLC's. Prerequisite: Industrial Maintenance Electrical Motor Controls 470348

Industrial Maintenance Electrical Motor Controls 470348 This course addresses the diversity of electrical motor control devices and applications used in industry today with safety and electrical lockouts included. Prerequisite: Industrial Maintenance Electrical Principles 470322

Industrial Maintenance Electrical Principles 470322 This course introduces the theory of electricity and magnetism and the relationship of voltage, current, resistance, and power in electrical circuits. The course is designed to develop an understanding of alternating and direct current fundamentals. Students will apply formulas to analyze the operation of AC and DC circuits.

Basic Blueprint Reading 499920 ½ credit This course presents basic applied math, lines, multi-view drawings, symbols, various schematics and diagrams, dimensioning techniques, sectional views, auxiliary views, threads and fasteners, and sketching typical to all shop drawings. Safety will be emphasized as an integral part of the course.

Basic Troubleshooting 499925 ½ credit This course explores the science of troubleshooting and the importance of proper maintenance procedures; how to work well with others, aids in communication and trade responsibilities; examines actual troubleshooting techniques, aids in troubleshooting and how to use schematics and symbols; focuses on specific maintenance tasks such as solving mechanical and electrical problems, breakdown maintenance, and the how's and whys of planned maintenance. Prerequisite: Consent of Instructor

Fluid Power 470321 This course is a study of fluid power theory, component identification and application, schematic reading, and basic calculations related to pneumatic and hydraulic systems and their operations.

Robotics and Automation (For Maintenance) 470351 This course provides an introduction to the theory of robots including terminology, components, and basic programming. It provides theory of servo and non-servo robots. Topics include robot types, controllers, manipulators, basic robotic programming, and fluid power systems. It also provides basic theory of flexible and computer-integrated manufacturing and control systems.

Electrical Technician Pathway Course Sequence Example			
Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	499925 Basic Troubleshooting & 499920 Basic Blueprint Reading*	ELT 103/ BRX 120	3/3
10	470348 Industrial Maintenance Electrical Motor Controls	IMT 220/221	3/2
11	470330 Industrial Maintenance of PLC	EET 276/277	2/2
12	470322 Industrial Maintenance Electrical Principles	IMT 110/111	3/2
Total College Credits Earned			20
Additional Courses			
PLTW- IED Intro to Engineering Design			
Industry Certificates that can be earned			
NCCER- Electricity I or Mechanic I			
OSHA 10			
Careers related to this Pathway			
Industrial Maintenance		Welding	
CAD		Engineering	
This is only an example of how a student could complete this pathway.			

Electrical Engineering Pathway Course Sequence Example

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	Introduction to Engineering Design (PLTW)		
10	Industrial Maintenance Electrical Principles	FPX 100/101	3/2
11	Industrial Maintenance Electrical Motor Controls	IMT 220/221	3/2
12	Industrial Maintenance of PLC	EET 276/277	2/2
12	Digital Electronics (PLTW)		
Total College Credits Earned			14
Industry Certificates that can be earned			
REC- Foundation of Pre-Engineering Certification			
OSHA 10 Card			
Careers related to this Pathway			
Electrical Technician		Electrical Supervisor	
		Electrical Engineer	
This is only an example of how a student could complete this pathway.			

Maintenance Mechanic Pathway Course Sequence Example

Grade	High School Course	Equivalent College Course	College Credit Hrs.
9	499925 Basic Troubleshooting & 499920 Basic Blueprint Reading*	ELT 103/ BRX 120	3/3
10	470321 Fluid Power	FPX 100/101	3/2
11	470318 Maintaining Industrial Equipment	IMT 150/151	3/2
12	470322 Industrial Maintenance Electrical Principles	IMT 110/111	3/2
Total College Credits Earned			21
Additional Courses			
PLTW- IED Intro to Engineering Design			
Industrial Maintenance Electrical Motor Controls			
Industry Certificates that can be earned			
NCCER- Electricity I			
OSHA 10			
Careers related to this Pathway			
Maintenance Mechanic		Maintenance Supervisor	
Maintenance Inspector		Industrial Engineer Tech	
		Mechanical Engineer	
This is only an example of how a student could complete this pathway.			

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