

# Carroll County Career & Technology Center Programs 2021-22

LEARN MORE AT: <https://www.carrollk12.org/ctc>

## Construction

**Carpentry** covers all aspects of construction including blueprint reading, hand and power tool use, framing, roof truss manufacturing, laser elevation leveling, and interior and exterior finishing. The program is associated with the ABC apprenticeship program.

**Electrical Construction** provides instruction in the wiring, layout, assembly, installation, and testing of electrical fixtures using local and national electrical codes. The program is associated with the ABC apprenticeship program.

**Heating, Ventilation, & Air-Conditioning (HVAC)** includes instruction in air-conditioning, refrigeration, plumbing, heating, and sheet metal. The air-conditioning and refrigeration component includes instruction in sizing, layout, installation, and maintenance of oil, gas, electric, and heat pump forced air heating systems. The program is associated with the ABC apprenticeship program.

**Masonry** teaches students to build practical projects such as walls, columns, walkways, fireplaces, mailboxes, and BBQ's using brick, block, and stone. Students also create stonework & explore tile installation. Masonry is associated with the ABC apprenticeship program.

## Manufacturing, Engineering & Technology

**Drafting** allows students to translate ideas into pictures. Drafting is completed both by hand and on the computer. The major units of study include architectural drafting, civil engineering, mechanical engineering, and Computer Aided Design (CAD). Students sit for the CAD certification test.

**Engineering (Project Lead the Way)** is a pre-engineering program that gives students a glimpse into the world of engineering through computer-based and hands-on activities and projects. Students work as a team to construct solutions to engineering problems using sophisticated software such as Inventor and EdgeCAM. (For more info go to <http://www.pltw.org/our-programs/high-school-engineering-program> )

**Applied Mechanical Engineering** gives experience that would benefit a students pursuing a BS in mechanical engineer or starting a career as a machinist/engineering technician. Students will create precision parts using industrial tools and advanced computer numerically controlled (CNC) equipment. This program has earned national certification through the National Institute of Metalworking Skills (NIMS). ([www.nims-skills.org](http://www.nims-skills.org) ) and has been recognized at the state and national level for its quality of instruction.

**Welding Technology** teaches students various welding processes, correct welding procedures, and practical metal fabrication skills through classroom and hands-on lab experiences. Some of the techniques students learn are Gas Metal Arc Welding, Arc Welding, Tungsten Inert Gas Welding, Oxyfuel Cutting, Plasma Cutting, and Computer Automated Plasma Cutting. Welding is associated with the ABC apprenticeship program and the American Welding Society.

## Transportation

**Auto Service Technology** prepares students to work with the latest diagnostic equipment so they can be successful automotive technicians. ASE certifications for students include Maintenance and Light Repair, Brakes, Steering and Suspension, Electrical, and Engine Performance. ( [www.asestudentcertification.com](http://www.asestudentcertification.com) )

**Collision Repair Technology** combines auto repair and art. Students learn the skills necessary to restore vehicles to pre-accident condition. ASE certifications for students include Structural Analysis and Damage Repair, Non-Structural and Damage Repair, and Painting/Refinishing. ( [www.asestudentcertification.com](http://www.asestudentcertification.com) )

**Heavy Equipment & Truck Technology** prepares students all phases of repair work on diesel engines used to power buses, ships, trucks, electric generators, farm equipment, and construction machinery. Seniors disassemble, assemble and dyno test a diesel engine. Possible ASE certifications include Diesel Engines, Brakes, and Diesel Engine Electronics. ( [www.asestudentcertification.com](http://www.asestudentcertification.com) )

\*\*\*\*Why wait until you graduate to start your career, gain experience in industry-grade labs, earn college credits in YOUR field, become certified, and meet students with your career interests?

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	<p><b><u>Programming/Cyber Operations (CISCO®)</u></b> focuses on cybersecurity, technologies, and procedures to defend networks. Students learn the Python programming language for web development, data analysis, and A.I.. Students also learn the Linux operating system and command line, and basic open source. Topics like architecture, structures, functions, components, models &amp; computer networks are covered.</p> <p><b><u>Networking/Cybersecurity (CISCO®)</u></b> instructs students in network setup, management, and troubleshooting. Students can earn certifications: CISCO CCENT, and Network +. (CISCO® is a globally recognized organization.) Students may earn up to 16 college credits in the IT field.</p>	<b>Computer &amp; Info Tech</b>
<b>Consumer Services &amp; Hospitality</b>	<p><b><u>Cosmetology</u></b> uses theory and practical experiences to prepare students for the Maryland State Board of Cosmetology practical and written examination needed to become a licensed cosmetologist. Some areas covered are anatomy, hair coloring/cutting, manicures, pedicures, chemical texture services, and facials.</p> <p><b><u>Culinary Arts</u></b> instructs students in high volume food production, pastry/baking, menu planning, and purchasing in our professional kitchen. Students will serve lunch in the Café and Grill and cater outside events in their pursuit of learning all things culinary. Students take two professional tests; Level 1 students sit for the ServSafe® Exam and Level 2 take the ACF certification test. Two options are available: (1) Professional Cook and (2) Baking and Pastry. The program is certified by the American Culinary Federation. <a href="http://www.acfchefs.org">www.acfchefs.org</a></p> <p><b><u>Textiles &amp; Fashion Careers</u></b> instructs students in material selection, design, cutting, sewing, fitting, alterations, and interior design. An in-depth study of fashion design and merchandising is also taught. Students personally construct garments to prepare for the student-produced fashion show.</p>	
	<p><b><u>Academy of Health Professions</u></b> offers two ways to prepare for after graduation, including giving you opportunities for real-life clinical experiences. If you plan to go to college right after high school, we have programs in (1) Pre-Nursing and (2) Physical Rehabilitation OR if you plan to work right after high school we have career certification programs in (1) Career Certified Nursing (2) Dental Assisting and (3) Pharmacy Tech</p> <p><b><u>Biomedical Sciences (Project Lead the Way®)</u></b> is designed for students who have career interests in biomedical research and biotechnology. Students work involves the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body systems and various health conditions. (For more info go to: <a href="http://www.pltw.org/our-programs/high-school-biomedical-sciences-program">http://www.pltw.org/our-programs/high-school-biomedical-sciences-program</a>)</p> <p><b><u>Homeland Security: Criminal Justice</u></b> introduces students to multiple aspects of criminal justice, law enforcement, and public safety. Students will gain general knowledge needed to enter various law enforcement careers at the federal, state, and local levels.</p> <p><b><u>Homeland Sec./Geo Info Systems &amp; Tech</u></b> teaches students different methodologies used in G.I.S. and remote sensing to gather intelligence and disseminate information through initial notifications, emergency response, and recovery. Using the same data that NASA uses, students will analyze images using spatial and 3D analysis. The students will also use real time GPS data to map a community.</p>	<b>Health, Biosciences, &amp; Human Services</b>
<b>Arts, Media, &amp; Communication</b>	<p><b><u>Print Production</u></b> is a nationally certified Print ED program that prepares students for a career in graphic design, page layout, illustration, photography, and production. MAC based labs allow students to learn how to edit and create original graphic art. (<a href="http://www.gaerf.org/PrintED.aspx">http://www.gaerf.org/PrintED.aspx</a>)</p> <p><b><u>Video Production</u></b> provides instruction in a real studio environment. Students create scripts and then record, capture, and edit film and television broadcasts. Students use HD Cameras and Hollywood level Final Cut Pro and Adobe Premier Pro editing software. Students also have access to a professional TV studio.</p>	