

# CARROLL COUNTY CAREER & TECHNOLOGY CENTER PROGRAMS

Learn more at: <https://ctc.carrollk12.org/>

## CONSTRUCTION (Programs associated with ABC Apprenticeship program. Students can earn OSHA-10):



### CARPENTRY:

Covers all aspects of construction including blueprint reading, hand and power tool use, framing, roof truss manufacturing, laser elevation leveling, and interior/exterior finishing



### HVAC:

Includes 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.



### 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.



### ELECTRICAL CONSTRUCTION:

Provides instruction in the wiring, layout, assembly, installation, and testing of electrical fixtures using local and national electrical codes.

## MANUFACTURING, ENGINEERING & TECHNOLOGY



### WELDING TECHNOLOGY:

Teaches students various welding processes, procedures, and metal fabrication skills. Students learn Gas Metal Arc Welding, Arc Welding, Tungsten Inert Gas Welding, Oxyfuel Cutting, Plasma Cutting, and Computer Automated Plasma Cutting.



### APPLIED MECHANICAL ENGINEERING:

Provides experience for students pursuing a BS in mechanical engineering or starting a career as a machinist/engineering technician. Students create precision parts using industrial tools and advanced computer numerically controlled (CNC) equipment. This program is nationally certified by the National Institute of Metalworking Skills (NIMS). ([www.nims-skills.org](http://www.nims-skills.org))



### ENGINEERING (PROJECT LEAD THE WAY):

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. (Go to <http://www.pltw.org/our-programs/high-school-engineering-program> to learn more)



### 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 AutoCAD certification test.

## 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))



### HEAVY EQUIPMENT AND 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))



### 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))

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## COMPUTER & INFO TECH



**NETWORKING/CYBERSECURITY (CISCO®):**  
instructs students in network setup, management, and troubleshooting. Students can earn certifications such as Network +. (CISCO® is a globally recognized organization.) Students may earn up to 16 college credits in the IT field.



**GEOSPATIAL AND DRONE TECH:**  
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.



**PROGRAMMING/CYBER OPERATIONS (CISCO®):**  
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 & computer networks are covered.

## CONSUMER SERVICES & HOSPITALITY



**COSMETOLOGY:**  
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.



**TEXTILES & FASHION CAREERS:**  
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.



**CULINARY ARTS:**  
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. Students take two professional tests; Level 1 students sit for the ServSafe® Manager Exam and Level 2 take the ACF certification test.  
Two options are available:  
(1) Professional Cook and (2) Baking and Pastry.

## MEDIA & COMMUNICATIONS



**PRINT PRODUCTION:**  
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. (<http://www.gaerf.org/PrintED.aspx>)



**VIDEO PRODUCTION:**  
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.



**INTERACTIVE MEDIA PRODUCTION (ANIMATION AND GAME DESIGN):**  
students experience multimedia design and production through project planning and product development. Students learn how to use tools and modalities in the production process. Students design, code, build, test and troubleshoot basic custom programs for multimedia applications and create web applications with advanced interactive components.

## HEALTH, BIOSCIENCES, AND HUMAN SERVICES



**ACADEMY OF HEALTH PROFESSIONS:**  
prepares students for a career in the healthcare industry, including opportunities for real-life clinical experiences in the community. If you plan to go to college right after high school, CCCTC offers programs in: (1) Pre-Nursing and (2) Physical Rehabilitation OR if you plan to work right after high school, we have career certifications in: (1) Nursing Assistant (2) Dental Assisting and (3) Pharmacy Technician



**BIOMEDICAL SCIENCES (PLTW®):**  
is 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: <http://www.pltw.org/our-programs/high-school-biomedical-sciences-program>)



**CRIMINAL JUSTICE (HOMELAND SECURITY):**  
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.



**TEACHER ACADEMY OF MARYLAND:**  
addresses the persistent teacher shortage challenge by creating a pipeline of teacher candidates. The four TAM courses give students hands-on experiences and early exposure to the teaching profession culminating in an internship while still in high school.