

VALLEY CAREER  
& TECHNICAL CENTER

WHERE PREPARATION MEETS OPPORTUNITY

# Program Guide





Valley Career & Technical Center is one of 9 regional centers in Virginia. VCTC provides high-quality technical education and career preparation to meet the needs of today's high school students and adults. The school serves the public school systems of Augusta County, Staunton, and Waynesboro. Most programs also offer students nationally recognized, industry-specific certifications upon successful course completion.

## **MISSION**

The Mission of Valley Career & Technical Center is to prepare our students to become responsible citizens through the development of career awareness, workforce readiness, and industry-specific job skills.

## **VISION**

The vision guiding Valley Career & Technical Center is to become an acknowledged leader in the field of Career and Technical Education. Serving our community by providing the finest work-force development and job training for youth and adults.

**Valley Career & Technical Center | 49 Hornet Rd. Fishersville, VA 22939**

540-245-5002 | Fax: 540-885-0407 | [www.valleytech.us](http://www.valleytech.us)

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### **Title IX Coordinator**

Kelly F. Troxell Ed.D., Executive Director of Personnel  
Augusta County Schools  
(540) 245-5107

### **Section 504 Coordinator**

Douglas W. Shifflett, Jr. Ed.D., Deputy Superintendent  
Augusta County Schools  
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# Agriculture, Food, and Natural Resources

The Agriculture, Food & Natural Resources Career Cluster include careers that involve the science and mechanics of improving the quality and safety of food, cultivating and preserving our natural resources, and caring for livestock and other animals. Further, you can learn about the business aspects involved in this broad field [[careertech.org](http://careertech.org)].

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# Floriculture & Greenhouse Plant Production



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Agriculture classes, Biology, Art, Intro to Culinary Arts, Nutrition and Wellness

### Other Activities

Gardening, Work w/ Project GROWS or Waynesboro Community Garden

**GRADES: 10, 11, OR 12**



**COURSE LENGTH: 1 Semester for Each Course**

**Floriculture (Semester 1)**

**Greenhouse Plant Production (Semester 2)**

**INDUSTRY CREDENTIALS OFFERED**

**NOCTI Floriculture—Greenhouse Exam**

**Private Pesticide Applicators License**

**BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL**

### Workforce

Arborist, Farm manager, Landscaper, Florist

*Local Employers: BlooMaker, Harmony Harvest Farm, Waynesboro Landscape & Garden Center*

### Career Certificate/ Associate Degree (2 yr) program

Virginia Tech—Ag Technology

Mountain Gateway CC—Ag & Forestry, Culinary Arts

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Agriculture, Botany, Biology, Environmental Science, Food Science, Crop & Soil Science, Landscape Design

## OVERVIEW

Students learn the science of floriculture and nursery plant production, plant material identification, floral design basics, marketing, business management, basics of the horticulture, plant identification, the science of plant production, and greenhouse management.

Course content includes :

- *Basic botany*
- *Preparation and care of plants and flowers*
- *Floral design*
- *Plant propagation*
- *Principles of vegetable production and commercial crops*
- *Hydroponics and microgreens*
- *Vertical crop production*
- *Leadership, marketing & business management*



# Livestock Production Management & Operating the Farm Business

## OVERVIEW

Students expand on current livestock knowledge to be able to efficiently and safely raise food animals and implement the business side of operating an agribusiness enterprise.

Course content includes:

- *Livestock nutrition, breeding, selection, and production*
- *Animal health and anatomy*
- *Beef, dairy, sheep and poultry industries*
- *Crop and soil science*
- *Conservation and natural resources*
- *Ag Mechanics*
- *Budgeting, financial analysis, and investment analysis*
- *Decision making to maximize profit*



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

MS/HS Classes

Agriculture classes, Biology, Environmental Science, Intro to Culinary Arts, Nutrition and Wellness, Personal Finance, Business classes

Other Activities

Gardening, work w/ Project GROWS or Waynesboro Community Garden, working with large animals, farm work

**GRADES: 11 OR 12**



**COURSE LENGTH: 1 Semester for Each Course**

**Livestock Production Management (Semester 1)**

**Operating the Farm Business (Semester 2)**

**INDUSTRY CREDENTIALS OFFERED**

*\*This program is Dual Enrolled with Blue Ridge Community College. Blue Ridge Community College dual-enrollment credit available at student's own expense (AGR 141 Animal Science & AGR 143 Ag Business, 3 credits each, total 6 credits).*

**Beef Quality Assurance Certification**

**Master of Beef Advocacy**

**BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL**

**Workforce**

Animal breeder, Poultry technician, Farm manager, Crop advisor, Environmental compliance inspector

*Local Employers: Augusta Co-op, Houff Corporation, Perdue Foods LLC*

**Career Certificate/ Associate Degree (2 yr) program**

**Virginia Tech**—Ag Technology

**BRCC**—Biotechnology Manufacturing, Veterinary Assisting, Veterinary Technology

**Bachelor's /Post Baccalaureate Degree (4 yr+) majors**

Agriculture, Animal Science, Biology, Business, Environmental Science, Food Science, Crop & Soil Science



# Veterinary Science



## OVERVIEW

Students learn small and large animal health care and how to assist the veterinarian with routine examinations, covering such topics as proper feeding and nutrition, animal grooming, administering medication, understanding disease and prevention, safe animal handling, and facility maintenance.

*\*Students have the opportunity to job shadow.*

Course content includes :

- *Veterinary profession and the roles of the veterinary team*
- *Veterinary sanitation and kennel management*
- *Animal body systems , medical terminology, immunology and vaccinations , reproduction/ breeding*
- *Basic animal behavior*
- *Breed identification and common medical conditions of the canine and feline*
- *Business procedures used in veterinary practice*
- *Safe animal handling*
- *Understanding disease and prevention in animals*

*“The best doctor in the world  
is a vet.*

*They can’t ask their patients  
what is the matter;  
they just have to know.”*

*-Will Rodgers*

# PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

## MS/HS Classes

Agriculture classes, Biology, Chemistry Personal Finance, Business classes

## Other Activities

Working with animals.

**GRADE 11\* or 12**

(11th graders have enrollment priority)

**COURSE LENGTH: 2 years**

**Veterinary Science I**

**Veterinary Science II**

**INDUSTRY CREDENTIALS OFFERED**

*\*This program is Dual Enrolled with Blue Ridge Community College.*

Upon successful completion of this 2 year program, students will receive 12 college credits (VET 101, VET 102, VET 103, & VET 118)

AND complete a **CAREER STUDIES CERTIFICATE in VETERINARY ASSISTING** from Blue Ridge Community College.

**BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL**

## Workforce

Vet assistant , biotechnician, ag sales, livestock management, dog breeder

Local Employers: Animal Hospital of Waynesboro, Commonwealth Vet Clinic,  
Blue Ridge Equine Clinic, Staunton Veterinary Clinic, Westwood Animal Hospital,

## Career Certificate/ Associate Degree (2 yr) program

Virginia Tech—Ag Technology

BRCC—Veterinary Technology

## Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Agriculture, Animal Science, Biology, Business, Health Sciences, Psychology, Veterinary Science

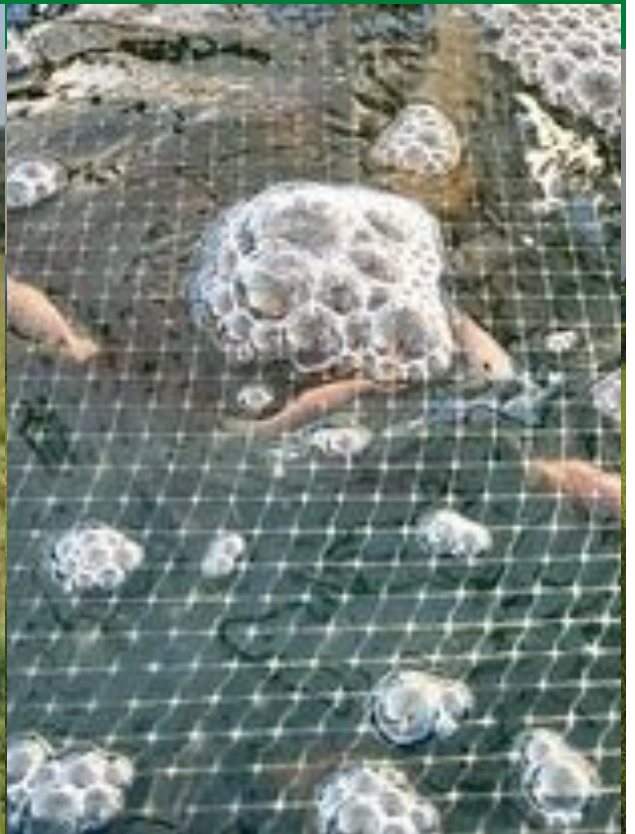






*“ No community can prosper until it learns there is as much dignity in tilling a field as in writing a poem.”*

*- Booker T. Washington*





# Hospitality & Tourism

The Hospitality & Tourism Career Cluster includes careers that allow you to travel and work with a variety of people. Careers can be found all over the world and range anywhere from hotel and restaurant operations to working in amusement parks and other tourist destinations. Excellent customer service skills are essential for everyone in this field  
[careertech.org].

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# Culinary Arts



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Intro to Culinary Arts, Intro to Hospitality, Nutrition and Wellness, Family & Consumer Science Classes, Business classes, Personal Finance, Biology, Chemistry

### Other Activities

Cooking, Work w/ Project GROWS or Waynesboro Community Garden

## GRADE 11 or 12

(11th graders have enrollment priority)



Course Length: 2 years

**Culinary Arts I**

**Culinary Arts II**

## INDUSTRY CREDENTIALS OFFERED

**ServSafe Food Handler's Certification**

**ServSafe Manager's Certification**

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Server, caterer, cook

Local Employers: Local Restaurants, Caterers, Hotels, Vineyards/Breweries

### Career Certificate/ Associate Degree (2 yr) program

BRCC/Mountain Gateway CC—Culinary Arts

Art Institute at Virginia Beach—Baking & Pastry, Culinary Arts

Culinary Institute of America—Baking & Pastry, Culinary Arts, Culinary Science

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Family & Consumer Sciences, Food Science & Technology, Hospitality & Tourism Management, Business Management, Nutrition, Public Health

## OVERVIEW

Students learn the foundations and knowledge of the food service industry, build advanced technical culinary skills, examine basic rules of kitchen safety and sanitation, of purchasing and receiving, and of fundamental nutrition.

Course content includes :

- *Kitchen basics and safety*
- *Safe food handling*
- *Baking*
- *Knife Skills*
- *Cooking—eggs, chicken, sauces, soups, salads, sandwiches, meat, seafood, advanced pastries, bread*
- *International Cuisines*
- *Nutrition*
- *Menu Writing*
- *Catering*
- *Costing*
- *Marketing for food business*
- *Restaurant operations and management*



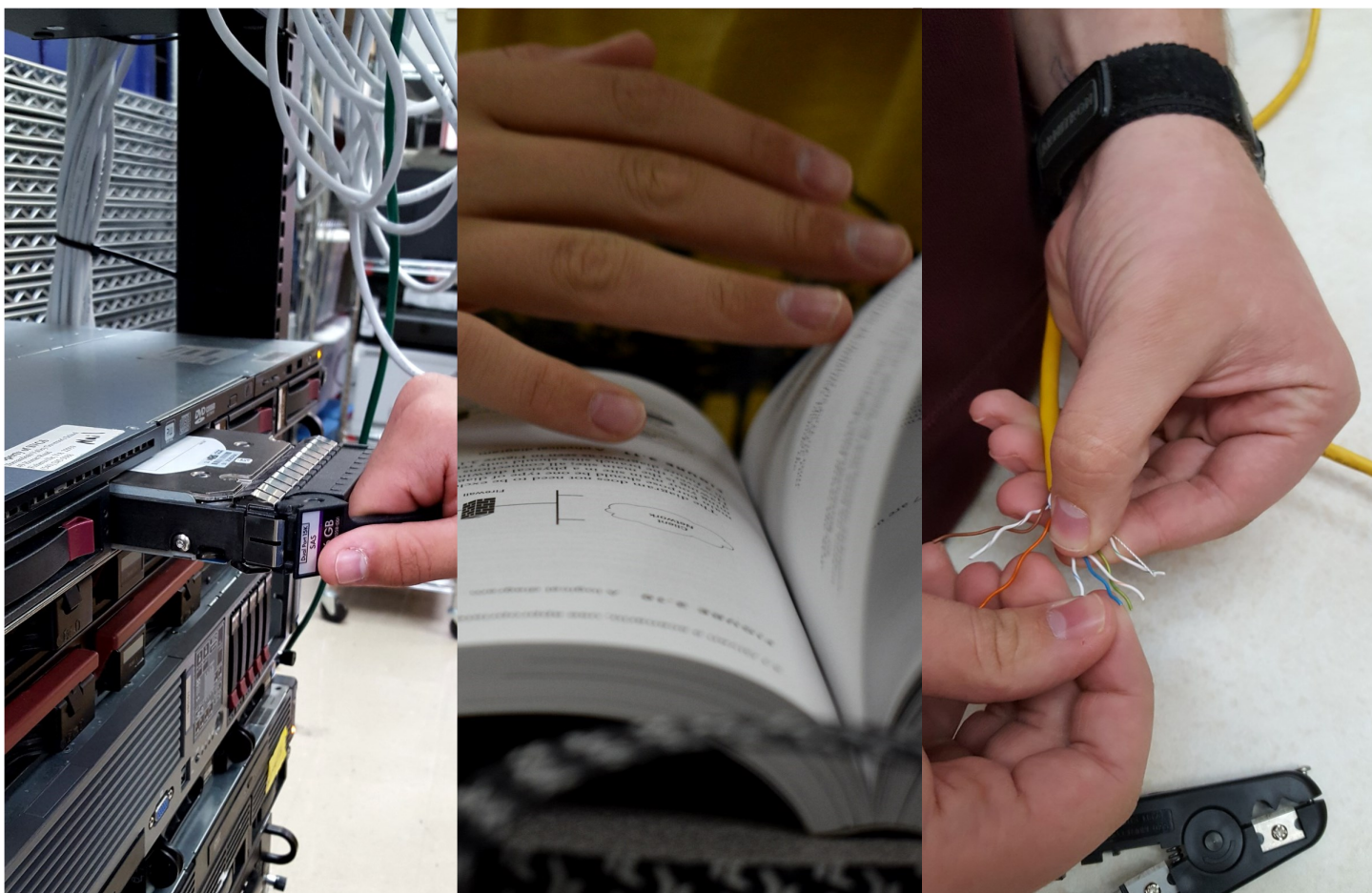
*"No one is born a great cook,  
one learns by doing."  
-Julia Child*

# Information Technology

Careers in information and communication technology fields include a variety of roles and tasks associated with planning, researching, installing and monitoring the performance of IT systems. IT professionals should have technical expertise in computer systems, hardware and networks. They need exceptional problem solving and analytical abilities to diagnose and repair defects or malfunctions. They should be able to grasp large amounts of information and be able to quickly learn and adapt to new technologies and advances in the field [careertech.org].

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# Computer Systems Technology

## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Computer classes, Technology classes, Digital Applications, Computer Information Systems, Design Multimedia & Web Technology, Digital Visualization, Intro to Computer Science, AP Computer Principles, Programming, Imaging Technology, Technical Drawing

### Other Activities

Game design, basic programming, video editing

**GRADE 10, 11**

**Course Length: 1 year**



**Computer Systems Technology I (Semester 1)**

**Computer Systems Technology II (Semester 2)**

**Industry Credentials**

**NOCTI**

**Comp TIA—A+ Certification**

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Computer support specialist, technical support analyst, computer information systems administrator

Local Employers: E-N Computers, Inc., Lumos Network, Advanced Telephone & Data, Inc., GLO Fiber, Lingo Networks, Augusta Health, School divisions

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Cloud Computing, Cybersecurity, Digital Design & Graphics, Information Technology for Business, Computer Science

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Accounting & Information Systems, Business Information Technology, Computer Engineering, Computational Modeling and Data Analytics, Computer Science, Electrical Engineering, Industrial, Logistics and Systems Engineering

## OVERVIEW

Students gain practical experience in assembling a computer system, installing an operating system, troubleshooting computers and peripherals, applying virtualization and cloud computing concepts, and using system tools and diagnostic software.

Course content includes :

- *Networking design, connectivity and troubleshooting*
- *Network hardware, cabling and connectors*
- *Network services and internet*
- *Memory and storage devices*
- *Motherboards, CPU's*
- *Custom configurations and peripherals*
- *Cloud and virtualization*
- *Windows tools*
- *Communication & Professionalism*



# Computer Networking & Software Operations

## OVERVIEW

Students learn networking concepts, from usage to components, and create peer-to-peer network systems and client server networks. Students install, configure, and connect network cards. Students learn how to install operating systems, set up and manage accounts, load software, and establish and implement security plans.

Course content includes :

- *Computer components*
- *Peer to peer network systems*
- *Client server network systems*
- *Install and configure network cards*
- *Set up and manage user accounts*
- *Install operating systems (Windows Server, Linux)*
- *Implement network security plans*

## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Computer classes, Technology classes, Digital Applications, Computer Information Systems, Design Multimedia & Web Technology, Digital Visualization, Intro to Computer Science, AP Computer Principles, Programming, Imaging Technology, Technical Drawing

### Other Activities

Game design, basic programming, video editing

**GRADE 11 OR 12**

**Course Length: 1 year**



**Computer Network Software Operations I (Semester 1)**

**Computer Network Software Operations II (Semester 2)**

**Industry Credentials**

**NOCTI**

**Comp TIA Network +**

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Computer support specialist, technical support analyst, computer information systems administrator

Local Employers: E-N Computers, Inc., Lumos Network, Advanced Telephone & Data, Inc., GLO Fiber, Lingo Networks, Augusta Health, School divisions

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Cloud Computing, Cybersecurity, Digital Design & Graphics, Information Technology for Business, Computer Science

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Accounting & Information Systems, Business Information Technology, Computer Engineering, Computational Modeling and Data Analytics, Computer Science, Electrical Engineering, Industrial, Logistics and Systems Engineering





“Computers are incredibly fast, accurate and stupid: humans are incredibly slow, inaccurate and brilliant: together they are incredibly powerful beyond imagination.”

-Albert Einstein



# Transportation, Distribution & Logistics

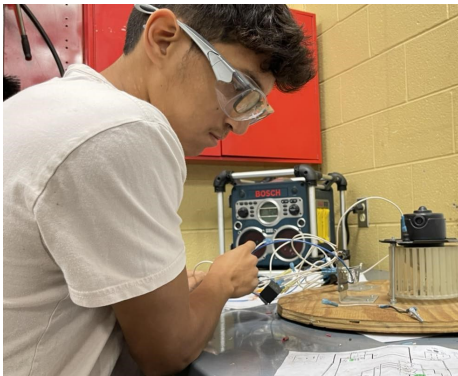
The Transportation, Distribution & Logistics Career Cluster include careers in which you plan, manage, and move everything from people to products through a range of transportation services. Individuals in this cluster are involved in the logistics of all types of transportation from road to rail and from air to water [careertech.org].

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Aviation Technology.....

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# Auto Body Technology

## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

**Auto Body Technology I**

**Auto Body Technology II**

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

Automotive Service Excellence (ASE) Student Certification

(B2) Painting and Refinishing

(B3) Non-Structural Analysis and Damage Repair

(B4) Structural Analysis and Damage Repair

(B5) Mechanical and Electrical Components

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Collision Repair Technician, Automotive Painter, Insurance Claims Adjuster, Industrial Maintenance

Local Employers: CMA Valley Dealerships, Whitesell Collision, Fisher Auto Parts, Truck & Equipment Corp.

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Automotive Analysis and Repair, Aviation Maintenance Technology, Welding

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Industrial Systems Engineering, Industrial Design, Materials Engineering, Mechanical Engineering/ Automotive Design

## OVERVIEW

Students will learn non-structural analysis, damage repair, basic welding and work with a variety of materials, using metal finishing and body filling techniques to prepare surfaces and repair panels.

Course content includes :

- *Analyze damage and determine repair procedures*
- *Remove and replace interior/exterior trim, mechanical & electrical components, repairable plastics*
- *Replace steel or aluminum panels*
- *Conservation and natural resources*
- *Apply metal finish and body filling*
- *Repair moveable glass and hardware*
- *Practice metal welding and cutting*
- *Operate spray gun equipment*
- *Mix and match paint, identify paint defects*
- *SP2 (Safety, Pollution & Prevention) safety exams*



# Automotive Technology

## OVERVIEW

Students will learn the technology, diagnosis and repair of automotive electrical, mechanical and hydraulic systems. Students will perform basic functions in engine repair, automatic transmission and transaxle, manual drive train and axles, suspension and steering systems, and brakes.

Course content includes:

- *Engine fundamentals, service and repair*
- *Tire, wheel bearings, and service*
- *Brake systems*
- *Automotive electricity and electrical systems*
- *Engine performance*
- *Emissions control*
- *Suspension and steering systems*
- *Wheel Alignment*



**“ It is a never ending battle of making your cars better and trying to better yourself.”**  
**-Dale Earnhardt**

## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

**Automotive Technology I**

**Automotive Technology II**

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

Automotive Service Excellence (ASE) Student Certification

(A1) Engine Repair

(A5) Brakes

(A2) Automatic Transmission

(A6) Electronic/Electrical Systems

(A3) Manual Drive train

(A7) Heating & A/C

(A4) Steering & Suspension

(A8) Engine Performance

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Auto Service Technician, Parts Technician, Service Manager, Auto Sales

Local Employers: CMA Valley Dealerships, NAPA Auto Parts, Fisher Auto Parts, Foreign Affairs Sales and Service, Discount Tire, Charlie Obaugh Auto Group, Local tire/ mechanics and car dealerships

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Automotive Analysis and Repair, Aviation Maintenance Technology

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Mechanical Engineering, Mechanical Design, Business



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering classes, Manufacturing, Algebra, Geometry, Earth Science, Physics, Chemistry

### Other Activities

Working with hand tools, building and designing, electronics, robotics, drones

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

Aviation Technology I

Aviation Technology II

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Collision Repair Technician, Automotive Painter, Insurance Claims Adjuster, Industrial Maintenance

Local Employers: CMA Valley Dealerships, Whitesell Collision, Fisher Auto Parts, Truck & Equipment Corp.

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Aviation Maintenance Technology, Commercial Pilot, Light Sport Aircraft, UAV FAA License

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Aerospace Engineering, Materials Engineering, Aviation, Aerospace Management, Air Traffic Control, Airport Management, Commercial Pilot, Mechanical Engineering

## OVERVIEW

Students will work with airframe and control surfaces, power plants, and basic aviation electricity, and perform ground operations and servicing procedures, as specified by Federal Aviation Administration (FAA) requirements.

Course content includes :

- *Applying math and science*
- *Interpreting maintenance publications, FAA forms and regulations*
- *Explore airframe and control surfaces*
- *Explain weight and balance procedures*
- *Explore aircraft design and drawings*
- *Understand aircraft materials and processes*
- *Understand the effects of cleaning and corrosion*
- *Understand fluid lines and fittings and basic electricity*
- *Provide ground operations and servicing*
- *Maintain the power plant*



# Diesel Equipment Technology

## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

**GRADE 11, 12**

**Course Length: 2 years**

(11th graders have enrollment priority)



**Diesel Equipment Technology I**  
**Diesel Equipment Technology II**

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

Automotive Service Excellence (ASE) Student Certification

(T2) Diesel Engines

(T4) Brakes

(T5) Steering and Suspension

(T6) Electrical/Electrical Systems

(T8) Inspection Maintenance and Minor Repair

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Bus, Truck or Diesel Mechanic, Heavy Truck Maintenance & Repair Technician, Truck Driving, Agriculture Mechanic

Local Employers: McKee, James River Equipment, Beverage Tractor, EXCEL Truck

Group, Mint Spring Equipment, Staunton Tractor, Rish Equipment, Co., Truck Enterprises, Lawrence Equipment

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Automotive Analysis and Repair, Aviation Maintenance Technology

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

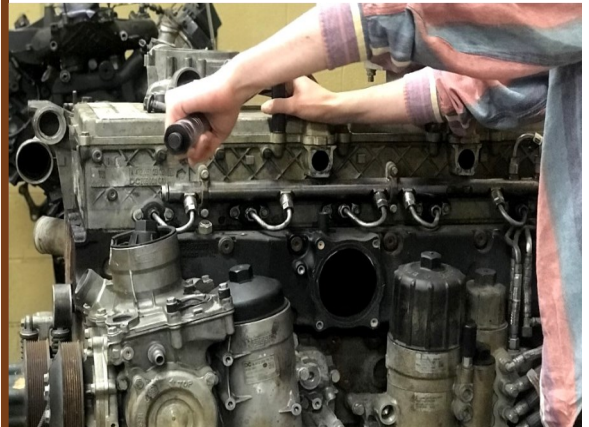
Mechanical Engineering, Mechanical Design, Business

## OVERVIEW

Students receive basic instruction in general maintenance of medium and heavy-duty diesel trucks and equipment. They learn theory and operation of diesel engines, brakes, suspension and steering systems, and electrical/electronic systems.

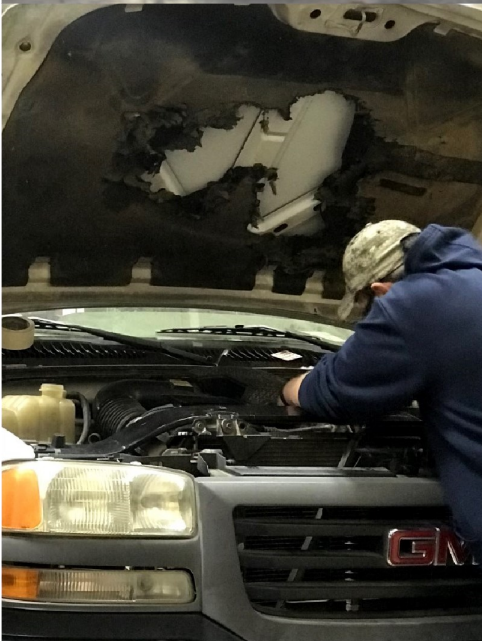
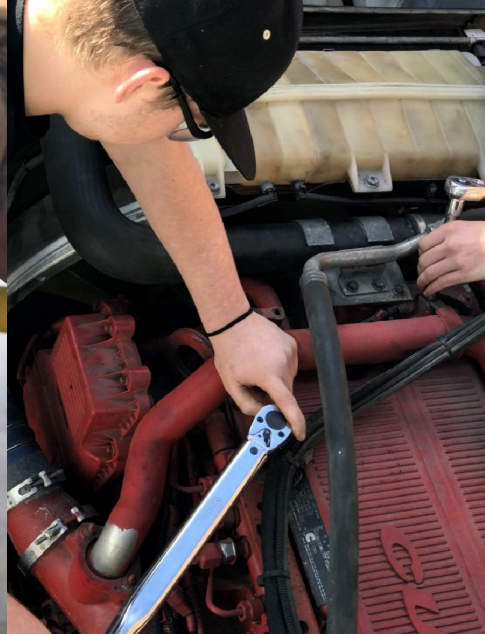
Course content includes :

- *Power tools & equipment, precision measuring tools*
- *Diesel engine fundamentals, construction, and engine diagnosis*
- *Engine removal and reinstallation*
- *Cylinder head and valve repair*
- *Cooling system, oil system operation and diagnosis, exhaust and turbo systems repair, fuel supply operations, electronic fuel management*
- *Brakes operations and adjustments*
- *Electrical/electronic systems theory, testing and repair*
- *Battery and starting systems, charging systems, lighting systems, gauges and warning devices*
- *Hydraulic and vacuum systems*
- *ABS and traction control systems*
- *Wheel bearings brakes, suspension and steering, drive train*





“ The expert in anything was once a beginner.”





# Architecture & Construction

The Architecture & Construction Career Cluster includes careers that allow you to design, plan, manage, build, and maintain machinery or structures, such as buildings, homes, and bridges. People employed in this cluster work on new structures, restorations, additions, alterations and repairs [careertech.org].

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Electricity .....24

Heating, Ventilation, Air Conditioning, & Refrigeration .....25

Masonry .....26





# Carpentry

## OVERVIEW

Students are taught to use hand and power tools, cut stock, apply construction mathematics, interpret blueprints, and understand basic rigging. Students will become proficient in identifying types of residential construction components to frame walls, floors, ceilings, roofs, doors, and windows.

Course content includes:

- *Blueprint reading*
- *Floor framing*
- *Wall framing*
- *Ceiling framing*
- *Roof framing*
- *Roofing*
- *Door and window installation*
- *Stair framing*
- *Materials estimation, construction math*
- *Exterior & interior finishes*
- *Insulation & ventilation*
- *Drywall*



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

**Carpentry I**

**Carpentry II**

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Carpenter, Cabinet Maker, Drywall Installer, Construction Manager

Local Employers: Builders 1st Source, Virginia Frame, Valley Building Supply, County— Line Building, Shields Construction

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Computer Aided Drafting

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Architecture, Construction Engineering, Construction Management, Real Estate Management



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

Electricity I

Electricity II

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

Meets “formal training” requirements of the VDPOR for JOURNEYMAN/MASTER ELECTRICIAN

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Electrician’s Helper, Electrician Journeyman, Lineman

Local Employers: Moore’s Electrical and Mechanical, Trumbo Electric, Dave Brooks Electric, Mid-Valley Electric, Snead Electric, AAA Electric, Klein Tools, P & S Electric, Ron Jacobs Electric, Augusta Electric, Pride Electric, E & E Plumbing and Electrical

### Career Certificate/ Associate Degree (2 yr) program

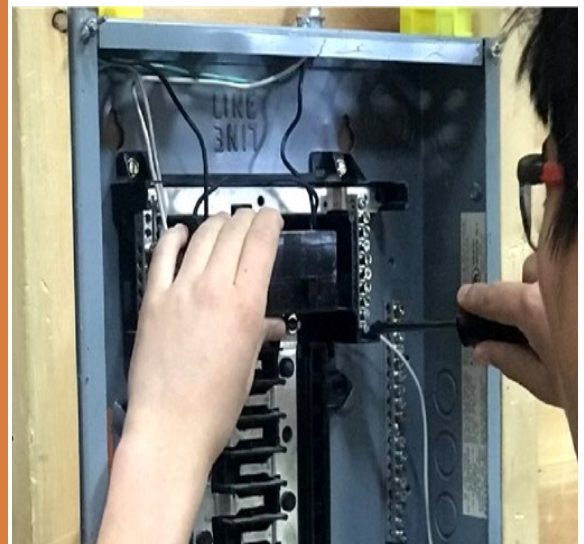
BRCC—Mechatronics

### Bachelor’s /Post Baccalaureate Degree (4 yr+) majors

Architecture, Construction Engineering, Construction Management, Electrical Engineering

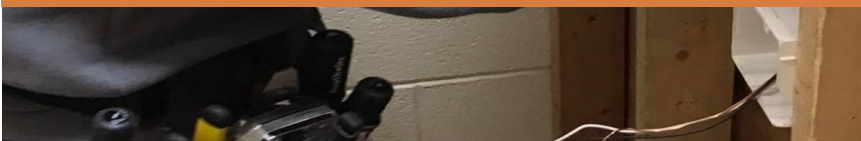
## OVERVIEW

Students will learn fundamental electrical skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. This includes residential wiring of houses and apartments, commercial wiring of retailers, schools, businesses, and hospitals, and industrial wiring of factories.



Course content includes:

- *Electrical energy fundamentals*
- *Electrician tools and basic safety*
- *Conductors, boxes, fittings, and covers*
- *Device wiring*
- *Overcurrent protection and grounding*
- *National Electric Code (NEC)*
- *Service entrance*
- *Electrical prints and specifications*
- *Branch circuits, feeders and service design*
- *Appliance wiring and special outlets*
- *Conduit bending*





# Heating, Ventilation, Air Conditioning & Refrigeration (HVACR)

## OVERVIEW

Students are taught to install, repair, and maintain the operating conditions of heating, ventilation, air-conditioning, and refrigeration (HVACR) systems. Students work with piping and tubing, study the principles of heat and electricity, install duct systems, and comply with U.S. Environmental Protection Agency (EPA) regulations.

Course content includes:

- *Tools and basic safety*
- *Basic electricity and controls*
- *Duct building and design*
- *Pipe fitting and plumbing*
- *Sheet metal fitting*
- *Disassemble evaporators, condensers, compressors, and expansion devices*
- *Install and troubleshoot room air conditioners*
- *Wire and troubleshoot thermostats and safeties*
- *Install and troubleshoot electric heat pump, gas heat, and hydronic heat*
- *Equipment installation*



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

HVCAR I

HVACR II

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

CFC (Chlorofluorocarbon) Certification

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Sheet metal worker, Heating and air conditioning technician, Energy auditor, Refrigeration mechanic

Local Employers: Noland Supply Company, Vailes Home Improvement, Valley Air, Riddleberger Brothers, Aireco Supply, Local Industries

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Computer Aided Drafting

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Architecture, Construction Engineering, Construction Management, Electrical Engineering, Mechanical Engineering

## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

GRADE 11, 12

Course Length: 1 year

Masonry I

Masonry II



## INDUSTRY CREDENTIALS OFFERED

OSHA 10

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Masonry restoration technician, Cement mason, Tile and marble setter, Bricklayer, Stone mason, Building inspector

Local Employers: Builders First Source, Davis Construction and Masonry, M.H. Masonry & Associates, Inc., Marshall Contracting and Masonry, Inc., Mathers Construction, Nielsen Builders, Inc., R & B Construction, LLC, Shields Construction Company

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Computer Aided Drafting

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Architecture, Construction Engineering, Construction Management, Historical Architecture and Renovations

## OVERVIEW

Students will lay brick and block, explore the properties of and mix mortar, recognize mathematical concepts, and identify the components of blueprints used in masonry.

Course content includes :

- *Basic bricklaying and block laying for line work and constructing leads*
- *Constructing masonry piers and columns*
- *Cleaning new masonry work*
- *Constructing anchored brick veneer walls*
- *Constructing masonry pilasters, masonry wall chases, brick arches and CMU walls*
- *Constructing masonry composite walls and cavity walls*
- *Constructing brick paving, stairs and stoops*
- *Understand building codes*
- *Estimating masonry material quantities/ costs and labor costs*





“ Every job is a portrait of those who did it.  
Do the job right and take pride in what you do.”





# Manufacturing

The Manufacturing Career Cluster includes careers in planning, managing, and performing the processing of materials into intermediate or final products.

Careers also include related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering [[careertech.org](http://careertech.org)].

**Industrial Maintenance.....29**

**Precision Machining .....30**

**Welding.....32**





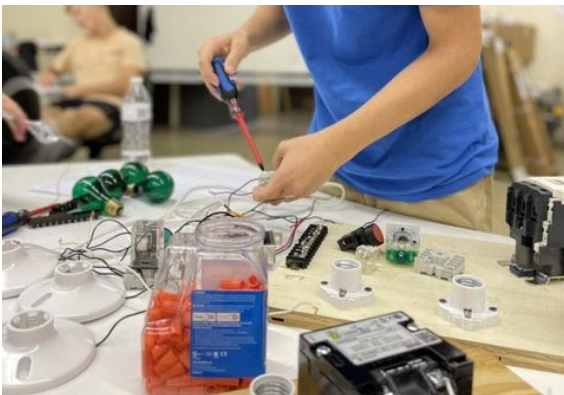
# Industrial Maintenance

## OVERVIEW

Industrial maintenance technicians repair and maintain commercial or industrial equipment in buildings. Students are taught safety and precision measurement skills and gain hands-on, practical experience in mechanical fundamentals and welding.

Course content includes:

- *Hydraulic & pneumatic systems operations*
- *Electrical and industrial power systems*
- *Mechanical systems*
- *Specialized measuring tools, hand tools and technical drawings*
- *Welding process and visual inspections of welds*
- *Oxyfuel cutting*
- *Welding operations (SMAW, GMAW, FCAW)*



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

**Industrial Maintenance I**

**Industrial Maintenance II**

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Manufacturing production technician, Industrial engineering technician, Industrial maintenance, Automated manufacturing technician, Welder, Electrician

Local Employers: Hershey's, McKee, Nibco, Merck, Innovative Refrigeration Systems, Packaging Corporation of America

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Mechatronics, Manufacturing Engineering Technology, Manufacturing Operations, Manufacturing Biotechnology

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any type of Engineering (i.e. mechanical, electrical, industrial, material)

# Precision Machining

## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

Precision Machining I

Precision Machining II

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

Credit toward Virginia certified Machinist Apprenticeship

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Manufacturing production technician, Industrial engineering technician, Industrial maintenance, Automated manufacturing technician, Welder, Electrician

Local Employers: Hershey's, McKee, Nibco, Merck, Innovative Refrigeration Systems, Packaging Corporation of America

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Mechatronics, Manufacturing Engineering Technology, Manufacturing Operations, Manufacturing Biotechnology

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any type of Engineering (i.e. mechanical, electrical, industrial, material)

## OVERVIEW

Machinists are highly skilled, creative problem solvers who are task-oriented and self-directed individuals. Students will learn how to use a variety of machines and learn how to cut material away from a larger piece of metal, plastic, or wood to make it a certain shape or size using machines tools and strategies for manufacturing. Students are taught safety awareness, the foundations of machining, how to accurately apply measurements, use engineering drawings and sketches, and apply metalworking theory in order to efficiently plan, manage, and perform general machine maintenance and machining jobs.

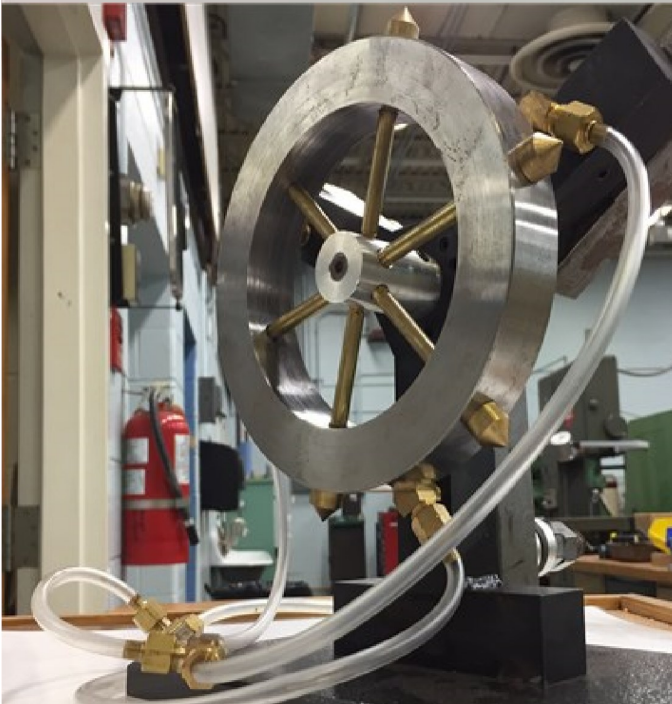
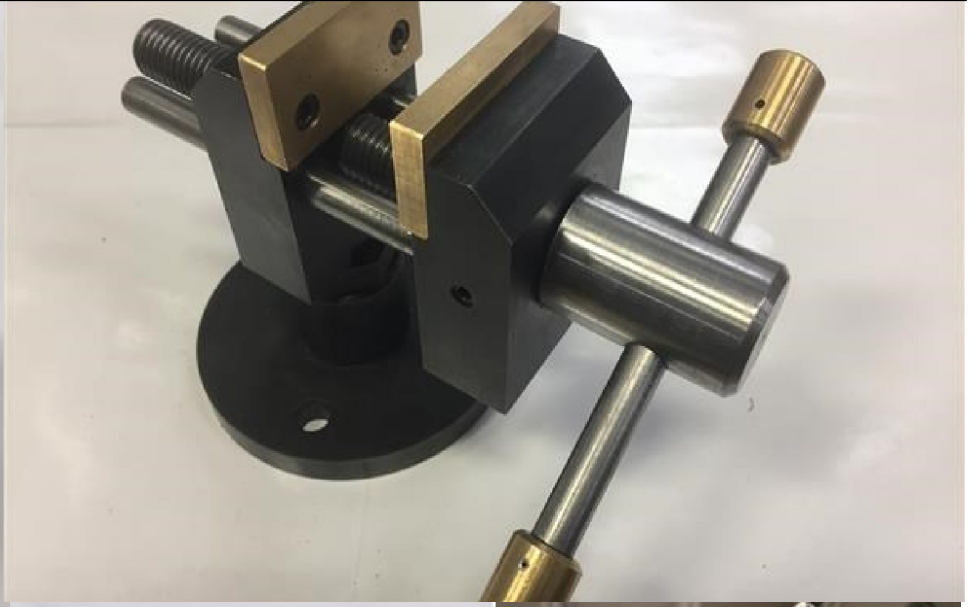
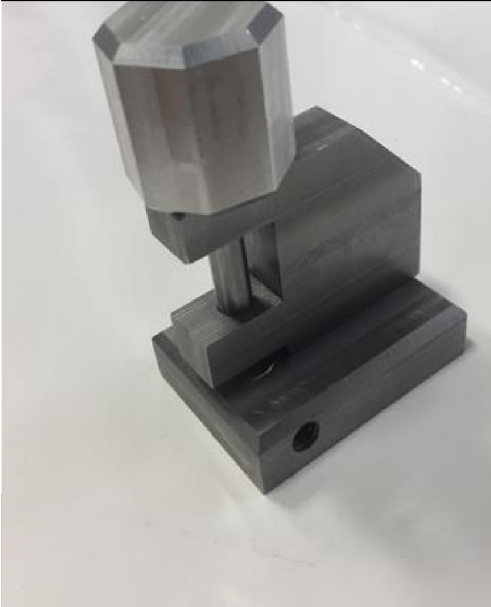
Course content includes:

- *Precision measuring operations with various tools*
- *Knowledge of machine parts and pieces*
- *Set up and operate machine tools*
- *Basics of machining using mills, lathes, band saws, and various hand tools*
- *Create and read technical drawings, part files, and assemblies using CAD software*
- *Use CAD software for design, testing, and prototyping part assembly*
- *Understand basic math to achieve proper part tolerance*





## Items Created by Precision Machining Students



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Ag Mechanics, Ag Power, Technology Foundations, Technology Transfer, Materials & Processes, Technical Drawing classes, Engineering Explorations, Manufacturing

### Other Activities

Working with hand tools, building and designing

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

Welding I

Welding II

## INDUSTRY CREDENTIALS OFFERED

OSHA 10

American Welding Society Certification in:

GMAW, SMAW, FCAW, GTAW (3/8" plate in 1G position)

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Machinist, CNC Operator, Gunsmith, Tool and Die Maker, Production Manager, Quality Control Technician

Local Employers: Industrial Machine Works, Northrop Grumman, Nibco, Objective Industry, Rexnord, Valley Precision, Inc. Virginia Panel Corporation

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Machining Credential Courses, Manufacturing

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any type of Engineering (i.e. mechanical, electrical, industrial, material)

## OVERVIEW

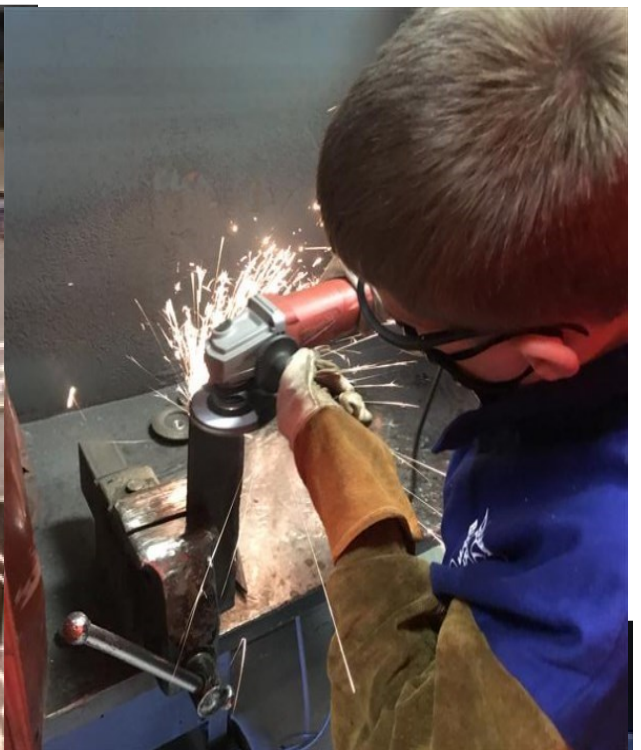
Students will learn how to use manual welding, cutting, and electrical arc welding processes to fabricate and join metal parts according to diagrams, blueprints, and specifications.

Course content includes:

- *Proficient set-up of machines and performing quality weld use in all positions*
- *SMAW (Shielded Metal Arc Welding)*
- *GMAW (Gas Metal Arc Welding)*
- *GTAW (Gas Tungsten Arc Welding)*
- *FCAW (Flux-cored Arc Welding)*
- *Operate PAC (plasma –arc cutting) and OFC (oxy-fuel cutting) torches*
- *Understand principles of metal*









# Health Science

The Health Science Career Cluster includes careers in which you help keep people healthy and treat those who are not. Work directly with people by conducting research on diseases and other important health information.

This field allows you to work in diverse environments such as hospitals, medical and dental offices or labs [[careertech.org](http://careertech.org)].

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# Dental Assistant

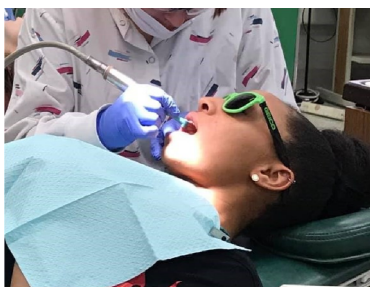
## OVERVIEW

Students are introduced to careers in dentistry and practice and learn many of the skills utilized in these professions while attaining the skills necessary to become entry-level dental assistants. Study includes infection control; anatomy and physiology; tooth morphology; oral histology; preventive dentistry; applied psychology; effective communication; office administration and management; use of dental software; operative dentistry techniques; and dental materials/laboratory skills

\*Students have the opportunity to shadow/ mentor in a dentist's office.

### *Course Content includes:*

- *Oral anatomy and physiology*
- *Tooth morphology*
- *Infection control & sterilization*
- *Managing hazardous chemical and waste material*
- *Pharmacology*
- *Preventive dentistry*
- *Radiographic procedures and radiology theory*
- *Operative and laboratory procedures*
- *Seating/positioning of patients, tray set-ups*
- *Taking, pouring, and trimming alginate impressions*
- *Coronal polishing*
- *Ethics and law*



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Biology, Chemistry, Anatomy/Physiology, Nutrition & Wellness, Athletic Training I & II, Intro to Health Professions, Psychology, Sociology, Health Classes, Foreign languages, ASL, Business, Accounting

### Other Activities

Working with others—babysitting, working with elderly, job shadowing, talking with health care professionals

**GRADE 11, 12**

**Course Length: 2 years**

**Dental Careers I (Semester 1)**

**Dental Careers II (Semester 2)**



## INDUSTRY CREDENTIALS OFFERED

NOCTI—Dental Assisting Assessment  
Dental Radiation & Safety Certificate

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Dental Receptionist, Dental Assistant  
Local Employers: Area dentist offices

### Career Certificate/ Associate Degree (2 yr) program

Dental Hygienist (Virginia Western CC), Radiologic Technology (BRCC) Medical Coding (BRCC)

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Dentistry, Dental Surgery, Dental Hygienist, Pre– medical studies, Any health study

# Emergency Medical Technician

## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Biology, Chemistry, Anatomy/Physiology, Nutrition & Wellness, Athletic Training I & II, Intro to Health Professions, Psychology, Sociology, Health Classes, Foreign languages, ASL, Business, Accounting

### Other Activities

Working with others—babysitting, working with elderly, job shadowing, talking with health care professionals

## GRADE 11 or 12

\*Must be 16 or older at beginning of class



Course Length: 1 year

**EMT (Emergency Medical Technician) I (Semester 1)**

**EMT (Emergency Medical Technician II) (Semester 2)**

## INDUSTRY CREDENTIALS OFFERED

CPR for the Health Care Provider

National Incident Management System (NIMS) 100, 200, 700, 800

IS-5 Introduction to Hazardous Materials

AWR-160 Terrorism Awareness

EMT Certification for VA

National Registry of EMTs Certification (Must be 18)

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

EMT, flight paramedic

Local Employers: Augusta Health, Local fire/law enforcement departments, Private ambulance services

### Career Certificate/ Associate Degree (2 yr) program

Practical Nursing (VCTC),

Medical Sonography (Piedmont CC)

Registered Nursing (BRCC)

Medical Coding (BRCC)

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any health career profession

## OVERVIEW

The tasks for this course represent the National and Virginia Emergency Medical Services (EMS) Educational Standards. Students explore and apply the fundamentals of EMS, anatomy, physiology, and medical terminology while demonstrating skills in assessing and managing patient care, including assessing the scene and understanding shock, resuscitation, and trauma.

*\*Supervised field experience outside of school hours is required. This time will be a minimum of 20 hours and will be spent at Augusta Health Emergency Room as well as at a local rescue squad of your choosing.*

Course content includes:

- *Anatomy and physiology*
- *Medical Terminology*
- *Pathophysiology*
- *Airway management, respiration and artificial ventilation, respiratory emergencies*
- *Scene assessment & safety*
- *Primary assessment, vital signs and monitoring devices*
- *General pharmacology*
- *Cardiac, diabetic, hematologic, and allergy emergencies*





# Medical Assistant

## OVERVIEW

Students gain foundational knowledge in basic anatomy and physiology, medical ethics, medical asepsis, terminology, medical mathematics, and legal responsibilities. Students also develop basic skills and techniques to assist the healthcare provider and/or other medical professionals in patient examinations, basic emergency care, simple laboratory tests, and administrative duties.

Course content includes:

- *Basic structure of body systems*
- *Signs & symptoms of common disorders*
- *Prepare treatment/exam room*
- *Conduct patient triage*
- *Assist in physical exam*
- *Maintain sterile instruments and manage infection control*
- *Medical office functions with patient scheduling and transcription*
- *Managing financial transactions*



## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Biology, Chemistry, Anatomy/Physiology, Nutrition & Wellness, Athletic Training I & II, Intro to Health Professions, Psychology, Sociology, Health Classes, Foreign languages, ASL, Business, Accounting

### Other Activities

Working with others—babysitting, working with elderly, job shadowing, talking with health care professionals

## GRADE 11, 12

(11th graders have enrollment priority)



Course Length: 2 years

**Medical Assistant I**

**Medical Assistant II**

## INDUSTRY CREDENTIALS OFFERED

Certified Clinical Medical Assistant (CCMA) Examination (NHA)

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Medical Assistant, Medical Front Office Assistant, Materials Manager, Medical Transcriptionist, Clinical Laboratory Technologist, Medical Records Processing Assistant

Local Employers: Augusta Health, UVA Health Services, Sentara, local physicians offices

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Emergency Medical Services, Paramedic—C, Medical Coding, Nursing, Pre-respiratory therapy

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any health career profession

## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Biology, Chemistry, Anatomy/Physiology, Nutrition & Wellness, Athletic Training I & II, Intro to Health Professions, Psychology, Sociology, Health Classes, Foreign languages, ASL, Business, Accounting

### Other Activities

Working with others—babysitting, working with elderly, job shadowing, talking with health care professionals

**GRADE 11 or 12**

**Course Length: 1 year**

**Nurse Aide 1 (Semester 1)**

**Nurse Aide II (Semester 2)**

*\*VCTC Patient Care Technician is available as a second year in nursing preparation for students completing their certification as Certified Nurse Aide in Nurse Aide I & II.*



## INDUSTRY CREDENTIALS OFFERED

Virginia Board of Nursing—Certified Nurse Aide

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Certified Nurse Aide, Home Health Aide, Patient Care Technician

Local Employers: Augusta Health, RMH Sentara, Shenandoah Nursing and Rehabilitation, Other local medical and long-term care facilities

### Career Certificate/ Associate Degree (2 yr) program

Practical Nursing (VCTC)

Medical Sonography (Piedmont CC)

Nursing (BRCC)

Medical Coding (BRCC)

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any health career profession

## OVERVIEW

Students will master the technical skills required to provide safe and competent care for advanced clinical care of the acute medical surgical patient, the chronically ill, and the elderly as an entry level Certified Nurse Aide in the long-term care setting.

*\*Students receive skills training and hands-on clinical experiences in a healthcare setting.*

Course content includes:

- *Communication, teamwork, conflict management skills*
- *Infection Control*
- *Basic first aid, CPR and airway management*
- *Basic understanding of body systems and disorders*
- *Patient fall prevention*
- *Understanding client nutrition, elimination, and daily living*
- *Understanding signs of dementia*
- *Ethics and law*





# Patient Care Technician

## OVERVIEW

Offered as an advanced nursing course after the completion of Nurse Aide, students will have master the skills needed to perform electrocardiograms (ECGs); execute basic medical, lab, and exam procedures; draw blood; and provide basic patient/client care. In addition, students will understand basic pharmacology, facilitate client self-administration or assist with medication administration, follow proper procedures for preparing, administering, and maintaining medications, and follow appropriate procedures for documentation.

Course content includes:

- *Demonstrate medical procedures with patient care and comfort measures*
- *Assist in preventing medical complications*
- *Understand the role of the electrocardiogram (ECG)*
- *Understand phlebotomy and related procedures*
- *Understand pharmacology basics*
- *Understand how to administer prepared medications and provide proper documentation*
- *Understand pain management and issues of opioid addiction*
- *Understand legal and ethical issues of medical treatment and medication administration*



## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Biology, Chemistry, Anatomy/Physiology, Nutrition & Wellness, Athletic Training I & II, Intro to Health Professions, Psychology, Sociology, Health Classes, Foreign languages, ASL, Business, Accounting

### Other Activities

Working with others—babysitting, working with elderly, job shadowing, talking with health care professionals

## GRADE 12

(\*Eligible students must have successfully completed Nurse Aide I & II and passed the state board exam.)



Course Length: 1 year

**Patient Care Technician**

## INDUSTRY CREDENTIALS OFFERED

Virginia State Board of Nursing—Medication Aide

National Certification Exams—Patient Care Technician, ECG Technician, Phlebotomy Technician

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Medical Assistant, Home Health Aide, Cardiovascular Technician, Phlebotomist, Radiographer, Patient Care Technician

Local Employers: Augusta Health, UVA Health Services, Sentara, local physicians offices

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Nursing, Pre-respiratory therapy, Radiologic Technology

PVCC—Surgical Technology

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Any health career profession



“What you learn today,  
may save someone’s life tomorrow. Pay attention.”



There are no great people in the world, only great  
challenges ordinary people rise to meet.”





# Health Science Careers



EMT (\*EMT certification offered)  
 DENTAL CAREERS (\*Dental Radiation & Safety Certificate Offered)  
 MEDICAL ASSISTANT (\*CCMA certification offered)  
 NURSE AIDE (CNA certification offered)  
 PATIENT CARE TECHNICIAN (certifications offered)

## PATHWAY 1

### WORKFORCE TRAINING/CERTIFICATIONS—

*Career Certificate (1-4 specialized courses)*

CLINICAL MEDICAL ASSISTANT, EKG TECHNICIAN,  
 MEDICATION AIDE, MEDICAL OFFICE CODING, PARAMEDIC,  
 PHARMACY TECHNICIAN, PHLEBOTOMY



## PATHWAY 2



### NURSING

18 months program for

**LICENSED PRACTICAL NURSE (LPN) Certification**

*\*Note—Qualified students completing the VCTC Nurse Aide and Patient Care Technician Program receive priority in admissions and tuition cost reduction.*

### NURSING

**LPN to RN**

**REGISTERED NURSE (RN)**

Associates Degree



### NURSING

**LPN to BSN**

**REGISTERED NURSE (RN)**

Bachelor of Science in Nursing



## PATHWAY 3

### NURSING

2 yr Associate's Degree for  
**REGISTERED NURSE (RN)**



### NURSING

**RN TO BSN**

**BACHELORS OF SCIENCE IN NURSING (BSN)**

Various colleges/ universities

## PATHWAY 4

### NURSING

**DENTAL HYGIENIST  
 HEALTH SCIENCE  
 PRE- MED**

**BSN—4 yr BACHELORS OF SCIENCE IN NURSING**

**BS—4 YR BACHELOR OF SCIENCE**

Various colleges/ universities

### Post Baccalaureate/Advanced Degrees

**Master's, Doctorate, DDS, MD**

**NURSE PRACTITIONER, PHYSICIAN'S ASSISTANT, PHYSICAL THERAPY, DENTIST, DOCTOR**

Various colleges/ universities

## PATHWAY 5

### NURSING

2 yr Associate's Degree  
**REGISTERED NURSE (RN)**



### RADIOLOGIC TECHNOLOGY

2 yr Associate's Degree  
**RADIOLOGIC TECHNOLOGIST**



### DIAGNOSTIC MEDICAL SONOGRAPHY

2 yr Associate's Degree for  
**DIAGNOSTIC MEDICAL SONOGRAPHY** Certification



### DENTAL HYGIENE

2 yr Associate's Degree for  
**DENTAL HYGIENIST** Certification

# Education & Training

The Education & Training Career Cluster includes careers that serve individuals of all ages and across a range of industries. Career choices include teaching in a classroom, leading as a college president, and corporate training [[careertech.org](http://careertech.org)].

Teachers for Tomorrow.....43





## PROGRAM DETAILS

Recommended Courses/Experiences to  
**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Intro to Early Childhood, Child Development & Parenting, Family Relations, Any Family and Consumer Science class, Nutrition & Wellness, Psychology, Sociology, ASL, foreign languages, Advanced coursework in areas of teaching interest

### Other Activities

Tutoring, child care

**GRADE 11, 12**

\*Minimum 2.7 GPA, 3 teacher recommendations

Course Length: 1 year

**Teachers for Tomorrow (TFT) I (Semester 1)**

**Teachers for Tomorrow (TFT) II (Semester 2)**

**INDUSTRY CREDENTIALS OFFERED**

**VCLA (Virginia Communication and Literacy Assessment)**

## BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL

### Workforce

Teachers Aide, Child Care, Substitute Teacher

Local Employers: Local School Divisions

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Early Childhood Development

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Teacher—Early Childhood, Elementary, Middle School, High School teacher, Special Education teacher, School Counselor, Librarian, School Psychologist, School Administrator

## OVERVIEW

Virginia Teachers for Tomorrow (VTfT) allows secondary students to explore careers in the education. Students build a foundation for teaching; learn the history, structure, and governance of teaching; apply professional teaching techniques in classroom and field experiences; and reflect on their teaching experiences.

*\*Students enrolled in Teachers for Tomorrow II would complete a minimum of 90 hours of supervised internship in classroom with a cooperating teacher.*

*\*Students would also take the VCLA (Virginia Communication and Literacy Assessment). The VCLA must be passed prior to application submission for all initial teacher licensure programs.*

Course content includes:

- Explore student interests
- Build a foundation for teaching
- History, structure and governance of teaching
- Learn and apply professional techniques in the classroom
- Reflect on teaching experiences



# Human Services

The Human Services Career Cluster includes careers in which you help families and individuals with life services. You can assist people through early childhood care, mental health services, or personal care services. This diverse cluster requires individuals to have superior communication and problem-solving skills to provide various levels of support [careertech.org].

## Cosmetology .....45





## PROGRAM DETAILS

Recommended Courses/Experiences to

**EXPLORE, DISCOVER, and PREPARE for a CAREER!**

### MS/HS Classes

Any Family and Consumer Science class, Any art, music or theater class, Nutrition & Wellness, Psychology, Biology, Chemistry

### Other Activities

job shadowing, talking with professionals

**GRADE 11, 12**

(11th graders have enrollment priority)



Course Length: 2 year

**Cosmetology I**

**Cosmetology II**

**INDUSTRY CREDENTIALS OFFERED**

Virginia State Cosmetology Board Exam

**BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL**

### Workforce

Teachers Aide, Child Care

Local Employers: Local School Divisions

### Career Certificate/ Associate Degree (2 yr) program

BRCC—Early Childhood Development

### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Teacher—Early Childhood, Elementary, Middle School, High School, School Counselor, Librarian, School Psychologist

## OVERVIEW

Students will learn and perform the basic manipulative skills in the areas of hair care, skin care and nail care and the basic analytical skills to determine appropriate hair care, skin care, and nail care services to achieve the best total look for each client

*\*Students must successfully complete a minimum of 840 hours of instruction and lab-based practice during a two-year sequence of courses to be eligible to sit for the State Board Licensing Exam. Excessive absences (excused or unexcused) will affect the student's ability to meet the minimum hour required by the State Board*

Course content includes:

- *Introduction to profession*
- *Infection control*
- *Scalp care, shampooing, and conditioning*
- *Hairstyling, haircutting, hair coloring, chemical hair texture services*
- *Facials and make-up*
- *Manicuring, pedicuring, nail extensions*
- *Running a salon business, retail sales*
- *Communication, professional ethics, decision making*



# Law, Public Safety, Corrections & Security

The Law, Public Safety, Corrections & Security Career Cluster include careers that provide public services on local, state, federal, and international levels.

Responsibilities include prevention of and protection from harm such as crime or natural disasters. Career opportunities range from public safety officers to legal services to homeland security [careertech.org].

Criminal Justice.....47





## PROGRAM DETAILS

Recommended Courses/Experiences to

### **EXPLORE, DISCOVER, and PREPARE for a CAREER!**

#### MS/HS Classes

Sociology, Psychology, Biology, Chemistry, Government, Computer Applications,

Computer Information Systems. Cybersecurity, Health classes, Foreign languages, ASL

#### Other Activities

Job shadowing, talking with law enforcement professionals

**GRADE 11 or 12**

**Course Length: 1 year**



**Criminal Justice I (Semester 1)**

**Criminal Justice II (Semester 2)**

### **INDUSTRY CREDENTIALS OFFERED**

\*This program is Dual Enrolled with Blue Ridge Community College.

Blue Ridge Community College dual-enrollment credit available at student's own expense (ADJ 115 Patrol Procedures & ADM 134 Collection & Preservation of Evidence, 3 credits each, total 6 credits).

### **BUILD A CAREER—OPTIONS AFTER HIGH SCHOOL**

#### Workforce

Security guard, corrections officer, military police

Local Employers: Local law enforcement agencies, correction centers, courts, armed forces

#### Career Certificate/ Associate Degree (2 yr) program

BRCC—Administration of Justice

#### Bachelor's /Post Baccalaureate Degree (4 yr+) majors

Criminal Justice, Sociology, Psychology, Forensics, Computer Science, Cyber Security, Homeland Security, Terrorism, Public Administration, Pre-Law, Legal Studies

## OVERVIEW

Students are introduced to law, public safety, corrections, and security practices. Students examine contemporary issues in the criminal justice system and explore crime scene investigation, criminal investigation, court procedures, policing, and juvenile justice. This course provides a foundation for careers as lawyers, as forensics specialists, and as law enforcement and corrections officers.

Course content includes:

- *Law enforcement roles and responsibilities*
- *How to process an offender evidence*
- *How to conduct a traffic stop.*
- *How to make an arrest safely and professionally*
- *Investigating criminal activity*
- *Testifying in a courtroom*
- *How to conduct a crime scene search*
- *How to collect and preserve evidence and properly document a crime scene*
- *Correct use of chain of custody documents*
- *Describe the role of the crime laboratory in analyzing crime scene evidence*



# GENERAL INFORMATION

## About Us

Valley Career & Technical Center is a top Career and Technical Education Center in our area and one of 9 regional centers in Virginia. VCTC provides high-quality technical education and career preparation to meet the needs of today's high school students and adults. The school serves the public school systems of Augusta County, Staunton, and Waynesboro. Innovative learning laboratories, a highly skilled faculty, and a curriculum delivered to industry and state academic standards combine to distinguish VCTC as a leading provider of career and technical education. VCTC prepares today's students for tomorrow's emerging technologies and provides them with the competitive edge needed to meet the needs of the local and state labor markets.

## Enrollment Information

**Program Length-** Most technical program classes are held in the morning for first-year students and in the afternoon for second-year students. Most programs are designed to be two years in length; however, some programs are only one semester in length. Please look at the course description to determine the length of a particular program.

## Fees/Textbooks

All required textbooks are provided at no charge with the exception of dual enrollment courses. Each program has a nominal fee for consumable items such as workbooks and materials. There is a fee associated with select dual enrollment opportunities.

## Calendar

VCTC follows the Augusta County Public School calendar. This includes all grading periods, holidays, early dismissals, and delays/closings for inclement weather.

## Programs

New programs, as with all classes, must meet minimum enrollment requirements. Any class not meeting minimum enrollment may be withdrawn. Due to the popularity of many of our programs, students may be required to select an alternative program. Upper classman will be given first priority in high demand classes that have limited seating. Due to the popularity of programs, seats available for programs are decided upon grades, attendance, and teacher recommendation.

For questions or a copy of the VCTC Application, see your Guidance Counselor or go to our website:

<https://www.valleytech.us>



# OPPORTUNITIES

## **Clinical Experiences**

Clinical experiences are available to students enrolled in the Cosmetology, Dental Occupations, Emergency Medical Technician (EMT), Nurse Aide, and Teachers for Tomorrow. They are intended to provide valuable hands-on experiences and observation of professionals in a real-life setting. Clinical experience takes students into the actual workplace for a short period of time, whereby they perform day-to-day operations and job functions. Students must meet eligibility requirements to participate.

## **Dual Enrollment**

Dual enrollment classes are Blue Ridge Community College courses taught at VCTC during the regular school day in Criminal Justice, Ag, Teachers for Tomorrow & Veterinary Science. Classes are taught by high school teachers who are also BRCC adjunct faculty. Textbooks, syllabi, and workload are comparable to college freshman-level courses. Dual enrollment classes can save you a significant amount of money; students pay only 20% of the tuition. Dual enrollment courses vary by program.

Dual Enrollment Requirements:

- Meet dual enrollment admissions criteria.
- Apply for admission to BRCC.
- Permission of parents or legal guardian
- Meet all prerequisites of course.

## **Work Based Learning**

High Quality Work Based Learning Experiences provides opportunities for students to learn in an actual employment setting and is an option for students enrolled in their second-year of a two year program. This method of instruction is a unique plan of education that integrates classroom learning with supervised work experience in the business community. Eligible students apply for part-time employment in areas related to their chosen fields of study. Students work at approved training sites with written training plans. Both student instruction and employment are planned and supervised by the school and the employer so that each contributes to the student's career objectives and employability. Eligibility to participate in work-based learning is determined based on grades, completion of VDOE identified competencies related to their program of study, attendance, and a recommendation from the VCTC instructor. Work-based learning provides an excellent transition from high school to the world-of-work.

## **Registered Youth Apprenticeship**

Youth Apprenticeship is a structured combination of school-based and work-based learning. The program enables a student to receive a high school diploma, a post-secondary certificate or degree, and certification of industry-recognized competencies applicable to employment in a high-skilled occupation.

# STUDENT ORGANIZATIONS

## **SkillsUSA**

SkillsUSA empowers its members to become world-class workers, leaders and responsible American citizens. SkillsUSA improves the quality of our nation's future skilled workforce through the development of Framework skills that include personal, workplace and technical skills grounded in academics. It was formerly known as VICA (Vocational Industrial Clubs of America).



## **Health Occupations Students of America (HOSA National)**

HOSA is a national student organization endorsed by the U.S. Department of Education and the Health Science Technology Education (HSTE) Division of ACTE. HOSA's two-fold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people. HOSA's goal is to encourage all health occupations instructors and students to join and be actively involved in the HSTE-HOSA Partnership.



## **Future Farmers of America**

FFA is an intracurricular student organization for those interested in agriculture and leadership. The letters "FFA" stand for Future Farmers of America. FFA is a dynamic youth organization that changes lives and prepares members for premier leadership, personal growth and career success through agricultural education.

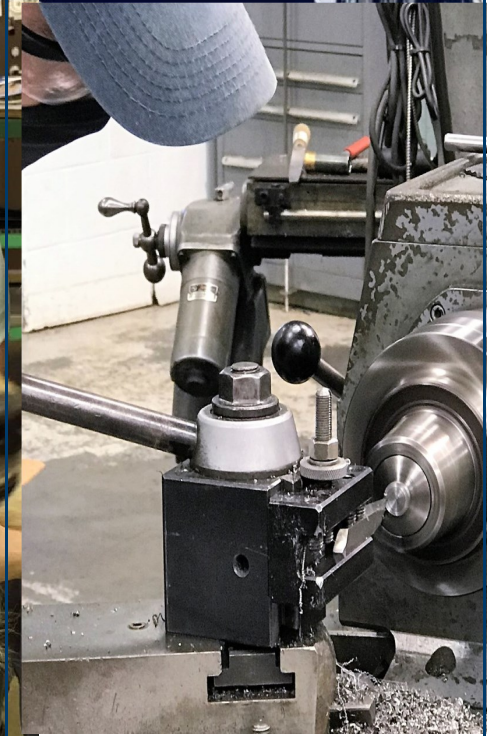
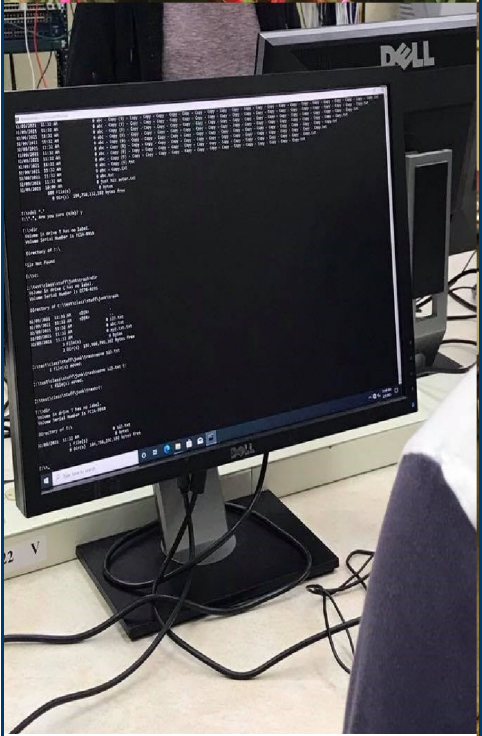
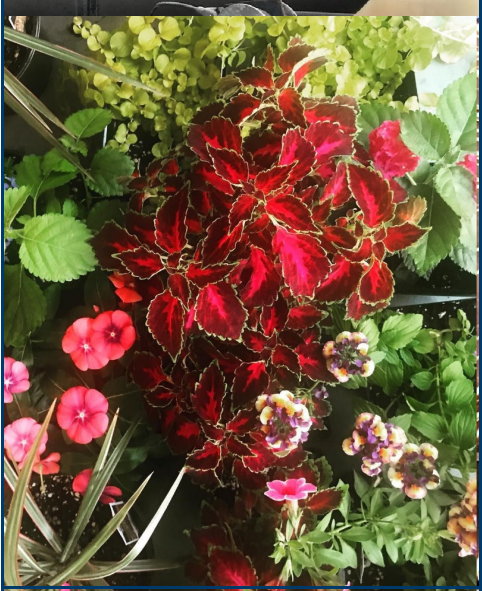


## **National Technical Honor Society (NTHS)**

NTHS is the acknowledged leader in the recognition of outstanding student achievement in career and technical education. NTHS encourages higher scholastic achievement, cultivates a desire for personal excellence, and helps top students find success in today's highly competitive workplace.









Program Name	Program Length	Grade Eligible	VDOE Credential	Industry Credential
<b>Auto Body Technology I &amp; II</b>	2 years	11, 12	ASE Entry Level Certification	OSHA 10, ASE Entry Level Certification
<b>Automotive Technology I &amp; II</b>	2 years	11, 12	ASE Entry Level Certification	OSHA 10, ASE Entry Level Certification
<b>Aviation Technology I &amp; II</b>	2 years	11, 12	Pending	OSHA 10
<b>Carpentry I &amp; II</b>	2 years	11, 12	NOCTI—Carpentry	OSHA 10
<b>Computer Network Software Applications I (Semester 1) Computer Network Software Applications II (Semester 2)</b>	1 year	11, 12	Comp TIA Network +	Comp TIA Network +
<b>Computer Systems Technology I (Semester 1) Computer Systems Technology II (Semester 2)</b>	1 year	10, 11	Comp TIA A +	Comp TIA A+
<b>Cosmetology I &amp; II</b>	2 years	11, 12	NOCTI—Cosmetology	Virginia State Cosmetology Board License
<b>Criminal Justice I (Semester 1) Criminal Justice II (Semester 2)</b>	1 year	11, 12	NOCTI—Criminal Justice	BRCC college credits—ADJ 115 & 134
<b>Culinary Arts I &amp; II</b>	2 years	11, 12	ServSafe Food Protection Manager's Certification	ServSafe Food Handler's Certification ServSafe Food Protection Manager's Certification
<b>Dental Careers I (Semester 1) Dental Careers II (Semester 2)</b>	1 year	11, 12	NOCTI—Dental Assisting	Dental Radiation & Safety Certificate
<b>Diesel Equipment Technology I &amp; II</b>	2 years	11, 12	ASE Entry Level Certification	OSHA 10 ASE Entry Level Certification
<b>Electricity I &amp; II</b>	2 years	11, 12	NOCTI—Electrical Construction Technology	OSHA 10 Training requirement for VDPOR - Journeyman/Master Electrician's Exam
<b>Emergency Medical Technician I (Semester 1) Emergency Medical Technician II (Semester 2)</b> <i>(* must be 16 before the first day of class)</i>	1 year	11, 12	NOCTI—Emergency Medical Services VDH Office of EMS—EMT Certification	CPR for the Health Care Provider National Incident Management System (NIMS) 100, 200, 700, 800 IS-5 Introduction to Hazardous Materials AWR-160 Terrorism Awareness VDH Office of EMS—EMT Certification National Registry of EMTs Certification (Must be 18)

Program Name	Program Length	Grade Eligible	VDOE Credential	Industry Credential
<b>Floriculture (Semester 1)</b> <b>Greenhouse Plant &amp; Production (Semester 2)</b>	1 year	10, 11, 12	NOCTI Floriculture— Greenhouse Exam DE w/ BRCC	BRCC college credits— AGR 142
<b>HVACR I &amp; II</b> <b>(Heating, Ventilation, Air Conditioning &amp; Refrigeration)</b>	2 years	11,12	CFC Certification	OSHA 10 CFC Certification
<b>Industrial Maintenance I, II</b>	2 years	11,12	Pending	OSHA 10
<b>Livestock Production Management (Semester 1)</b> <b>Managing the Farm Business (Semester 2)</b>	1 year	11, 12	DE w/ BRCC NOCTI—Agriculture Production Beef Quality Assurance Certification	BRCC college credits— AGR 141, 143 Beef Quality Assurance Certification
<b>Masonry I (Semester 1)</b> <b>Masonry II (Semester 2)</b>	1 year	11, 12	NOCTI—Construction Masonry –Block	OSHA 10
<b>Medical Assistant I</b> <b>Medical Assistant II</b>	2 year	11, 12	NOCTI	Certified Clinical Medical Assis- tant (CCMA) Examination (NHA)
<b>Nurse Aide I (Semester 1)</b> <b>Nurse Aide II (Semester 2)</b>	1 year	11, 12	NOCTI—Nurse Assisting	VA Board of Nursing— Certified Nurse Aide
<b>Patient Care Technician</b> <b>*Must have CNA license</b>	1 year	12	VA Board of Nursing— Medication Aide	VA Board of Nursing— Medication Aide
<b>Precision Machinery I &amp; II</b>	2 years	11, 12	NOCTI—Precision Machining	OSHA 10, Credit toward Virginia Certified Machinist Apprenticeship
<b>Teachers for Tomorrow I (Semester 1)</b> <b>Teachers for Tomorrow II (Semester 2)</b>	1 year	11, 12	ParaPro Assessment (ETS)	ParaPro Assessment (ETS)
<b>*GO2TEACH (SVGS/VCTC)</b> <b>Teachers for Tomorrow I</b> <b>Teachers for Tomorrow II</b>	2 year	11, 12	PRAXIS, VCLA DE w/ BRCC	BRCC college transfer credit— EDUC 200 Other possible college transfer credits from SVGS— ENG 111,112, HUM 111, PSYC 230, SOC 200, 215, CST 110
<b>Veterinary Science I &amp; II</b>	2 years	11, 12	DE w/ BRCC	Career Studies Certificate in Veterinary Assisting BRCC college credits—VET 101, VET 102, VET 103, & VET 118
<b>Welding I &amp; II</b>	2 years	11, 12	American Welding Society (AWS) Certification	OSHA 10 American Welding Society (AWS) Certification in: GMAW, SMAW, FCAW, GTAW



# Shenandoah Valley Center for Advanced Learning

The [Shenandoah Valley Center for Advanced Learning \(SVCAL\)](#) is an organization that provides specialized learning opportunities to a variety of students and coordinates educational programs best implemented through regional partnerships serving Augusta County, Staunton, and Waynesboro. These programs are listed below.



SHENANDOAH VALLEY  
GOVERNOR'S SCHOOL



**Shenandoah Center for Advanced Learning**  
**49 Hornet Rd.**  
**Fishersville, VA 22939**

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**Shenandoah Valley Governor's School** 540-245-5088  
**Valley Career Technical Center** 540-245-5002  
**Adult Education & Apprenticeship** 540-245-5002  
**Adult Learning Center** 540-245 -5083  
**Adult Practical Nursing** 540-245-5002