



GREENE COUNTY
TECHNICAL EDUCATION CENTER

Career & Technical Education

Pathways & Course Guide

WE BUILD SUCCESS!

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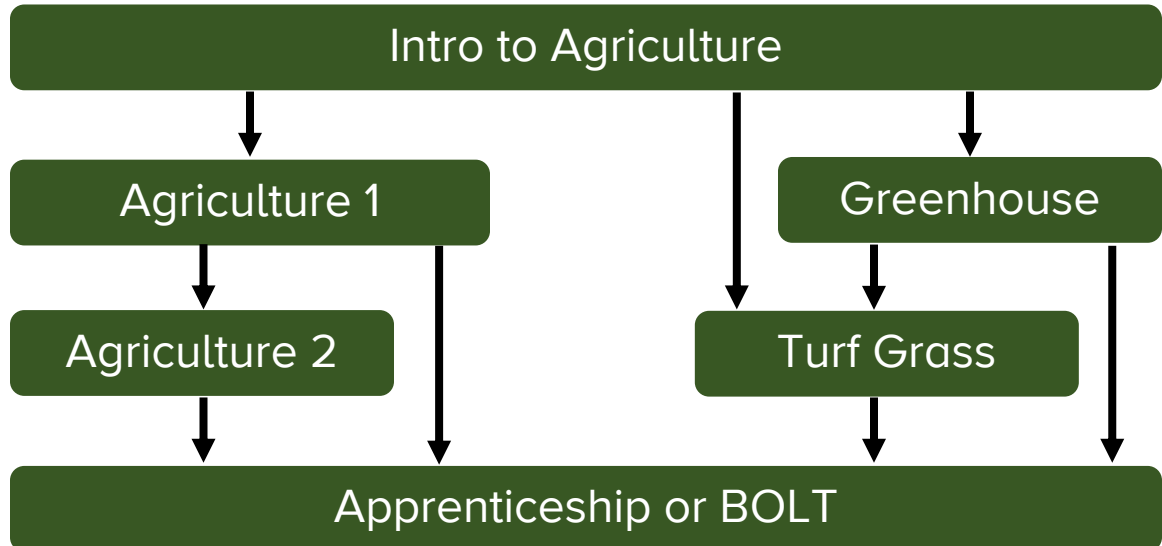
“Career Technical Education (CTE) provides students of all ages with the academic and technical skills, knowledge and training necessary to succeed in future careers and to become lifelong learners.”



Learning that works
for Virginia



Agriculture, Food, & Natural Resources



What you can do:

Selected Occupation(s)	Median Wage	Education
Farmers, Ranchers, Agricultural Managers	\$83,240	High School Diploma & Work experience
Nonfarm Animal Caretakers	\$22,380	High School Diploma & Certification
Refuse and Recyclable Material Collectors	\$29,220	High School Diploma & Certification
Water Treatment Plant and System Operators	\$42,530	High School Diploma & Certification
Agricultural Equipment Operators	\$30,730	High School Diploma & Certification
Logging Equipment Operators	\$37,960	High School Diploma & Certification
Biological Technicians	\$40,700	Bachelor's or more
Hazardous Materials Removal Workers	\$36,280	High School Diploma & Certification
Natural Sciences Managers	\$123,240	Bachelor's or more & Work Experience
Environmental Engineers	\$84,290	Bachelor's or more

Agriculture Courses

Introduction to Agriculture

Grades 9-10

1 Credit

This introductory course prepares students for careers in agricultural mechanics, fabrication, and construction. Students receive hands-on experience with the operation, maintenance, and repair of agricultural equipment. Other experiences will include the use of tools and equipment for agricultural structures, electricity, welding, and carpentry.

Agriculture 1

Grades 10-12

1 Credit

Prerequisite: *Introduction to Agriculture*

Instruction in agricultural structural systems will provide students with the knowledge and skills necessary to consider a career in constructing agricultural and building systems. Instruction will focus on the specific components of building systems and on developing leadership and career skills.

Agriculture 2

Grades 11-12

1 Credit

Prerequisite: *Agriculture 1*

Students gain positive experiences through fundamental agricultural competencies needed for rural or urban living. Areas of instruction include food production, handling, and preparation; introduction to the livestock and poultry industry; soil, soil fertility, and cultural practices; mechanical applications; plant systems and disease/pest management for shrubs, lawns, pastures, gardens, and fruit trees. The course emphasizes leadership development and participation in FFA activities. Supervised Agricultural Experiences will allow for enhanced learning and growth opportunities for students. Electrical, plumbing, carpentry, and metalworking lab competencies are incorporated throughout the course.

Greenhouse Plant Production & Management

Grades 9-12

1 Credit

Students are taught the operating procedures for a greenhouse. Units of instruction include developing plant production facilities, science application in plant production, and identification of plants. Business management, leadership development, and marketing skills are emphasized to prepare students for careers in the greenhouse plant production and management industry.

Turf Grass Establishment and Maintenance

Grades 10-12

1 Credit

Students begin to master the duties and tasks of professionals who establish and maintain turf in public areas such as golf courses; parks; athletic fields; school, industrial, and institutional campuses; and residential lawns.

Available credentials:

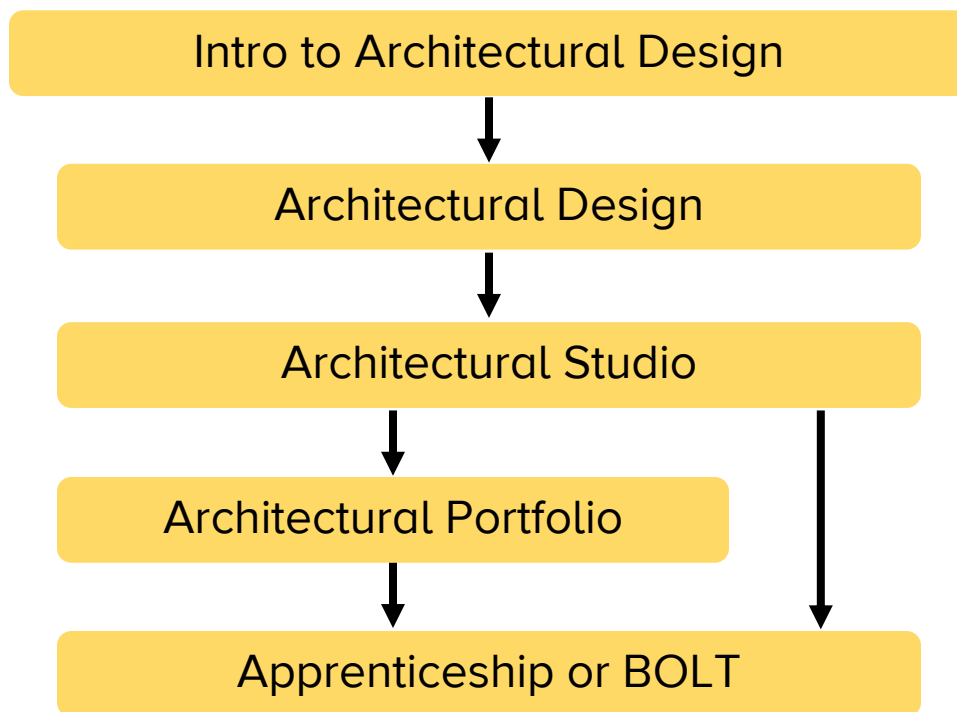
- Agriculture Mechanics Assessment
- Master Service Technician Examinations
- Power Equipment Technology Examination
- Plant Science Certification Examination
- Food Safety & Science Certification Examination

Student
Organization





Architectural Design



What you can do:

Selected Occupation(s)	Median Wage	Education
Architectural and Engineering Managers	\$160,870	Bachelor's or more & Training/Certification
Architects, Except Landscape and Naval	\$85,150	Bachelor's or more & Training/Certification
Civil Engineers	\$91,990	Bachelor's or more
Architectural and Civil Drafters	\$52,850	Associate's or more
Surveying and Mapping Technicians	\$44,320	Associate's or more & Training/Certification

Architecture Courses

Introduction to Architectural Design

Grades 9-12

1 Credit

This course will offer the student a diverse curriculum focused on a total residential design experience to include interior and exterior architecture. Students will explore drafting of home blueprints, residential area design, space planning and décor development, as well as housing styles. This curriculum will help direct students into fields of architecture, interior design, building trades and engineering.

Architectural Design

Grades 10-12

1 Credit

Prerequisite: *Intro to Architectural Design*

Architectural Design will further engage students in an in depth study of residential design. Architectural Design will allow specialization in the areas of Architecture or Interior Design. This course will build a bank of knowledge and skills utilized by designers in exteriors or interiors utilizing computer aided design, and model building.

Architectural Studio

Grades 11-12

1 Credit

Prerequisite: *Architectural Design*

Students will perfect hand-drafting techniques as well as computer aided design in developing full sets of workable drawings to include floor, foundation, roof, electrical, plumbing, and HVAC plans. This course will help prepare students for careers and higher education in architectural design, building contracting/trades, interior design, and engineering. Studio students will also be engaged in completing client design projects.

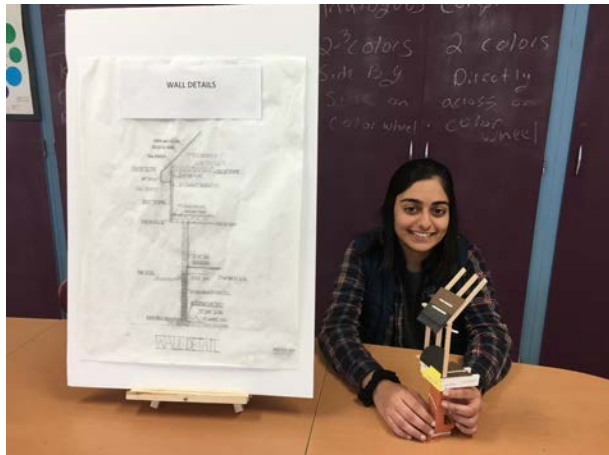
Architectural Portfolio

Grades 12

1 Credit

Prerequisite: *Architectural Studio*

Students will increase their understanding of drawing techniques learned in Architectural Design. They will research design related fields while identifying the role of advanced drawing and design in real-world projects. They will apply the design process, analyze design solutions, review engineering products, create 3D solid models using CAD, construct physical models, and create multimedia presentations of finished designs.



Student
Organization

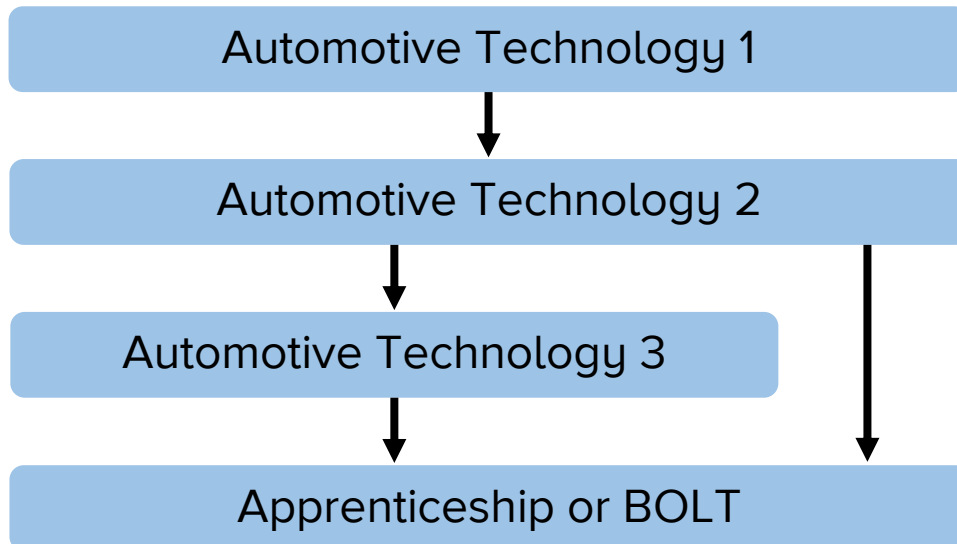


Available credentials:

- Interior Design Fundamentals Assessment
- Housing and Furnishings Assessment
- Interior Decorating and Design Assessment



Automotive Technology



What you can do:

Selected Occupation(s)	Median Wage	Education
Automotive Service Technicians and Mechanics	\$45,100	Associate's or more & Training/Certification
Bus and Truck Mechanics	\$47,870	High School Diploma & Certification
Mobile Heavy Equipment Mechanics	\$52,100	High School Diploma & Certification
Parts Salespersons	\$31,190	High School Diploma & Certification
Administrative Services Managers	\$106,060	Bachelor's or more & Training/Certification
Production, Planning, and Expediting Clerks	\$51,100	Associate's or more & Training/Certification

Automotive Technology Courses

Automotive Technology 1

Grades 9-12

1 Credit

In this course, students explore, handle, and perform basic functions in engine repair, automatic transmission and transaxle, manual drivetrain and axles, suspension and steering systems, and brakes. Students who successfully complete the Automotive Technology program may be eligible to take the Automotive Service Excellence (ASE) Student Certification examination. The ASE Student Certification is the first step in building a career as a service professional in the automotive industry.

Automotive Technology 2

Grades 10-12

2 Credits

Prerequisite: *Automotive Technology 1*

In this course, students build upon their basic knowledge of automotive technology, exploring more advanced tasks in engine repair, automatic transmission and transaxle, manual drive train and axles, suspension and steering systems, and brakes. They also learn about electrical, electronic, and HVAC systems in automobiles. Upon successful completion of the course, students may be eligible to take the Automotive Service Excellence (ASE) Student Certification examination.

Automotive Technology 3

Grades 11-12

2 Credits

Prerequisite: *Automotive Technology 2*

This course prepares students to perform automotive diagnosis and repairs in the following areas: engine repair, cooling systems, transmission and transaxle, manual drive trains and axles, suspension and steering, wheel and tire, brakes, electrical/electronic systems, HVAC, and engine performance. Students are provided with more advanced instruction in all systems as they prepare for the Automotive Service Excellence (ASE) certification examinations. The Automotive Technology program provides the fundamental skills necessary to succeed in an ever-changing and challenging industry as an automotive technician.



Student Organization

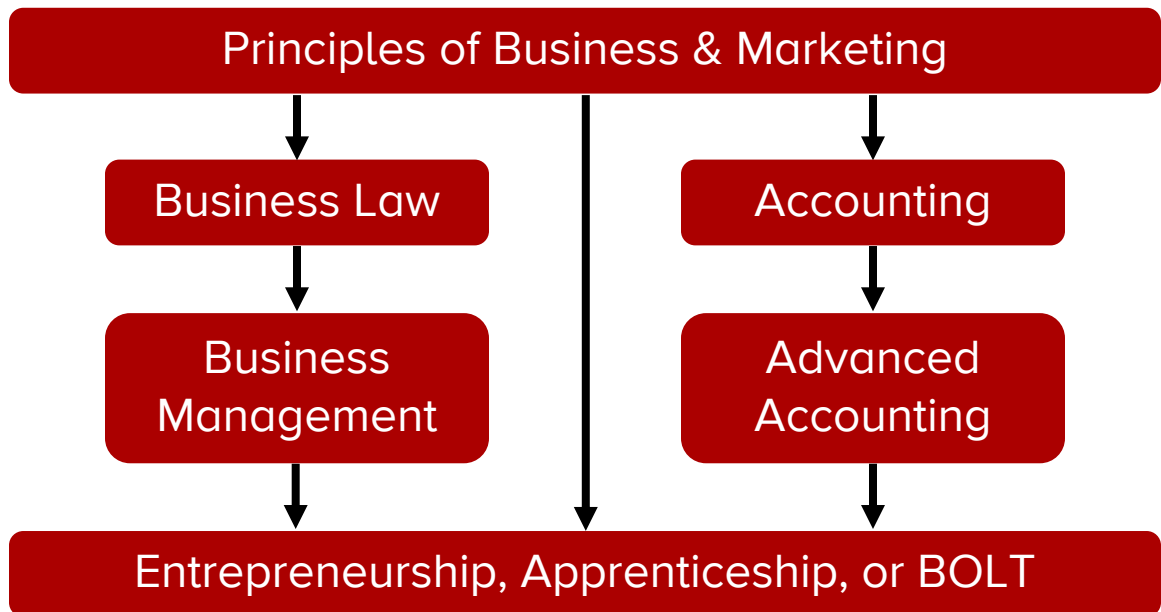
Available credentials:

- ASE Student Certification Examinations
- Automotive Technician Core Assessment





Business



What you can do:

Selected Occupation(s)	Median Wage	Education
Bookkeeping and Accounting Clerks	\$42,390	Associate's or more & Certification
Customer Service Representatives	\$34,390	Associate's or more & Certification
Shipping, Receiving, and Traffic Clerks	\$33,610	High School Diploma & Certification
Executive Secretaries and Assistants	\$62,000	Associate's or more & Certification
General and Operations Managers	\$139,120	Bachelor's or more & Work Experience
Social and Community Service Managers	\$88,200	Bachelor's or more & Work Experience
Compensation and Benefits Specialists	\$67,980	Bachelor's or more
Stock Clerks and Order Fillers	\$27,070	High School Diploma & Certification
Information and Record Clerks	\$43,670	Associate's or more & Certification

Business Courses

Accounting

Grades 9-12

1 Credit

Accounting students study the basic principles, concepts, and practices of the accounting cycle for a service business and a merchandising business. Topics covered include analyzing transactions, journalizing and posting entries, preparing payroll records and financial statements, and managing cash control systems. Business ethics and professional conduct are emphasized. Students learn fundamental accounting procedures, using both manual and electronic systems.

Advanced Accounting

Grades 10-12

1 Credit

Prerequisite: Accounting

Advanced Accounting students gain knowledge of advanced accounting principles, procedures, and techniques used to solve business problems and make financial decisions. Students work in a technology-integrated environment, using accounting and spreadsheet software to analyze, synthesize, evaluate, and interpret business financial data related to inventory, fixed assets, notes/accounts payable and receivable, implementation of a partnership and a corporation, and other specialized accounting systems. Using authentic workplace scenarios that reflect current industry trends and standards, students analyze financial data and acquire knowledge of business ethics.

Business Law

Grades 10-12

0.5 Credit

Semester Course

Students examine the foundations of the American legal system and learn the rights and responsibilities of citizens. Students gain practical knowledge and life skills by exploring economic and social concepts related to laws governing business and individuals. Focus areas include contracts, consumer protection, criminal law, tort law, international law, family/domestic law, employment law, cyber law, and careers in the legal fields.

Business Management

Grades 10-12

0.5 Credit

Semester Course

Students study basic management concepts and leadership styles as they explore business ownership, planning, operations, marketing, finance, economics, communications, the global marketplace, and human relations. Quality concepts, project management, problem solving, and ethical decision making are an integral part of the course. Student leadership skills may be enhanced by participation in school-based or virtual enterprises, job shadowing, internships, cooperative education, and/or the Future Business Leaders of America (FBLA).

Entrepreneurship Education

Grades 10-12

1 Credit

This course introduces students to the exciting world of creating, owning, and launching their own business. Students will learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle.

Principles of Business and Marketing

Grades 10-12

1 Credit

Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxation, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens. The real-world impact of technology, effective communication, and interpersonal skills is evident throughout the course. This course also supports career development skills and explores career options.

Available credentials:

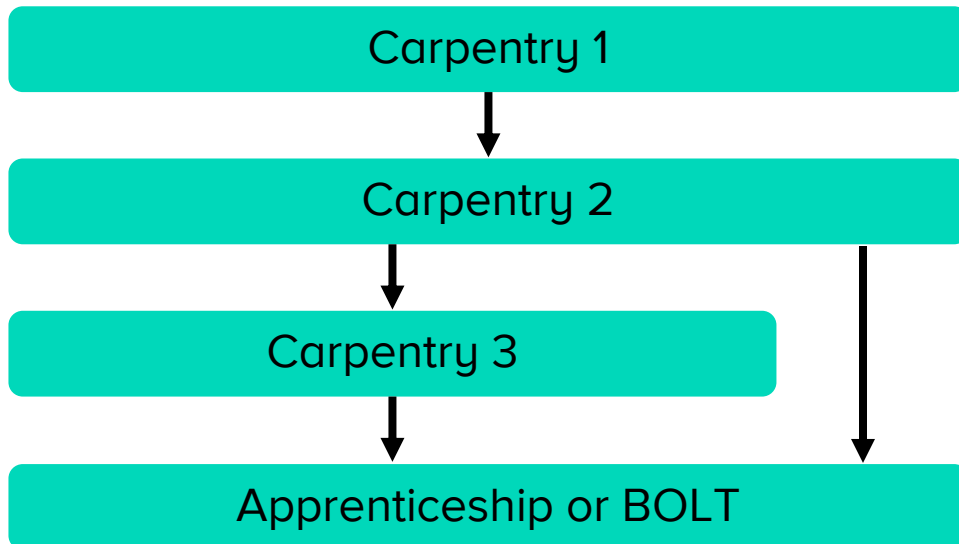
- WISE Financial Literacy Certification Examination
- Business Financial Management Assessment
- Accounting, Basic & Advanced Assessment

Student Organizations





Carpentry



What you can do:

Selected Occupation(s)	Median Wage	Education
Carpenters	\$42,760	High School Diploma & Certification
Electricians	\$50,060	Associate's or more & Training/Certification
Construction Laborers	\$30,500	High School Diploma & Certification
Plumbers, Pipefitters, and Steamfitters	\$48,930	High School Diploma & Certification
Construction Managers	\$111,680	Bachelor's or more & Training/Certification
Construction and Building Inspectors	\$59,000	Associate's or more & Training/Certification

Carpentry Courses

Carpentry 1

Grades 9-12

1 Credit

Carpentry 1 is the building block for achieving high-level construction industry skills that can result in an exciting and lucrative career. With an emphasis on safety, students are taught to use hand and power tools, cut stock, apply construction mathematics, and interpret blueprints. Students will become proficient in identifying types of residential construction components to form foundations and frame walls, floors, ceilings, roofs, doors, and windows.

Carpentry 2

Grades 10-12

2 Credits

Prerequisite: *Carpentry 1*

Carpentry 2 leads to successful transition into postsecondary education for careers in carpentry and related fields, such as construction management, architecture, and others. Students are taught the safe use of hand and power tools common to the industry to complement their OSHA 10 safety credential that will be earned in Carpentry 2. Students will become proficient in assembling and installing various types of residential construction components that are current with industry standards, including rigging and job-estimating procedures, forming foundations, framing floors, walls, ceiling, roofs, trusses, roofing materials, stairs, exterior doors and windows, decks, and porches. Successfully passing this course leads to CTE program completion.

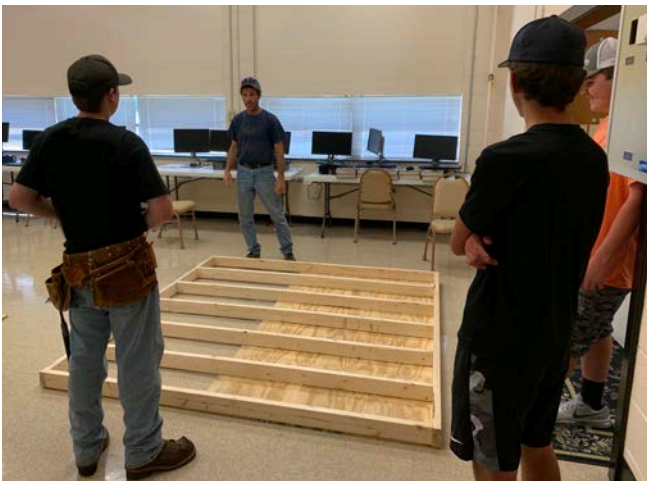
Carpentry 3

Grades 11-12

2 Credits

Prerequisite: *Carpentry 2*

Carpentry 3 is an advanced course that allows students to gain in-depth knowledge and hands-on experience in construction industry skills. Work-based learning methods of instruction for this course would provide the student with practical, on-the-job experience in addition to what he or she has already mastered in Carpentry 1 and 2. Additional exploration of the carpentry profession and postsecondary options for continuing education and professional opportunities are also emphasized. Students will have the opportunity to earn Industry Certification.



Student Organization

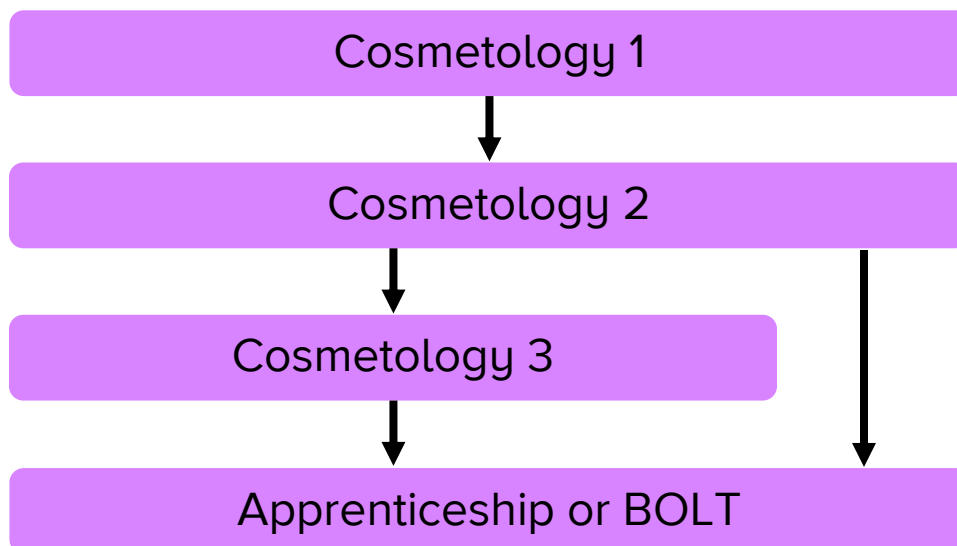
Available credentials:

- Carpentry Assessment
- Carpentry Examination
- Carpentry Level One Entry-Level Assessment





Cosmetology



What you can do:

Selected Occupation(s)	Median Wage	Education
Hairdressers, Hairstylists, and Cosmetologists	\$37,750	Associate's or more & Training/Certification
Supervisors of Personal Service Workers	\$43,810	Associate's or more & Training/Certification
Massage Therapists	\$30,500	Associate's or more & Training/Certification
Personal Care Aides	\$20,170	High School Diploma & Certification
Manicurists and Pedicurists	\$24,330	High School Diploma & Certification
Skincare Specialists	\$31,290	Associate's or more & Training/Certification

Cosmetology Courses

Cosmetology 1

Grades 9-12

2 Credits

In this introductory course, students study hair, skin, and nails and their related care. Students are grounded in theory as they prepare to practice procedures in a clinical lab setting or classroom, using manikins for manipulative skill practice. The first-year course emphasizes personal safety, professionalism, and sanitation and disinfection of equipment and facilities. Students develop skills in shampooing and conditioning hair, as well as styling and cutting hair. They are introduced to chemical texture services and develop skills in manicure and pedicure procedures.

Cosmetology 2

Grades 10-12

2 Credits

Prerequisite: *Cosmetology 1*

In this continuing course, students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to permanent waves, relaxers, lightening, and coloring hair. In addition, students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. Students will be introduced to a business management unit with a focus on managing the salon.

Cosmetology 3

Grades 11-12

2 Credits

Prerequisite: *Cosmetology 2*

In this advanced course, students build on their theoretical foundation of general sciences and practices in cosmetology to increase proficiency in hair cutting and styling on live models, with attention to professionalism, client consultation, safety, and infection control. Students are trained in safe chemical processes related to chemical texture services and advanced hair coloring techniques. They also develop artistic skills with wigs and hair additions. In addition, students learn to care for skin, hands, and feet, developing experience in providing facials, manicures, pedicures, and nail enhancements. An advanced business management unit focuses on managing the salon. Competency completion prepares the student for the Virginia State Licensing Exam. Students can combine classroom instruction and supervised on-the-job training in an approved position or internship with continuing supervision throughout the school year.



Student Organization

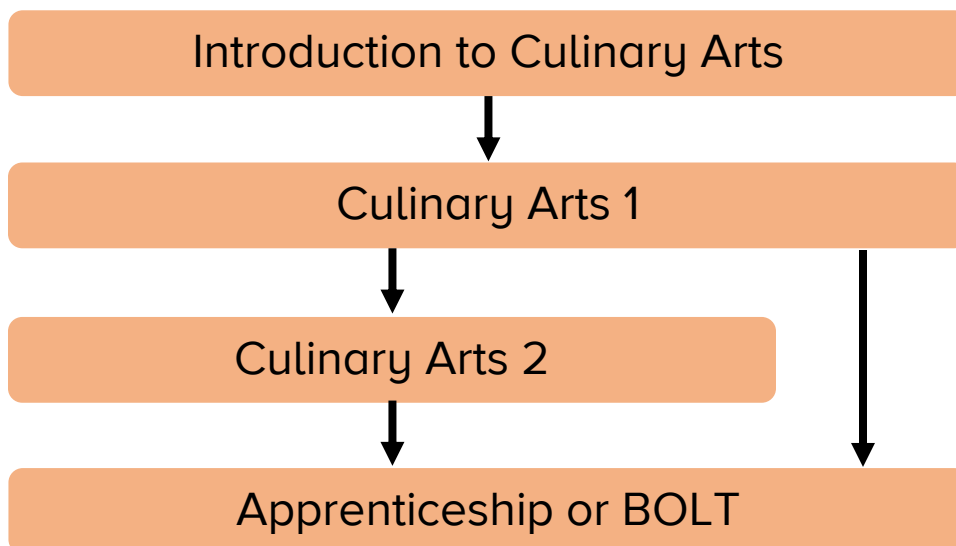
Available credentials:

- Cosmetology Examination (Virginia State Board Exam)
- Cosmetology Assessment





Culinary Arts



What you can do:

Selected Occupation(s)	Median Wage	Education
Chefs and Head Cooks	\$54,320	High School Diploma & Certification
Food Service Managers	\$64,120	Associate's or more & Training/Certification
Managers	\$131,670	Bachelor's or more & Work Experience
Institution and Cafeteria Cooks	\$28,440	High School Diploma & Certification
Supervisors of Food Preparation and Serving	\$35,900	Associate's or more & Training/Certification
Waiters and Waitresses	\$23,370	High School Diploma & Certification

Culinary Arts Courses

Introduction to Culinary Arts

Grades 9-12

1 Credit

Students will investigate food safety and sanitation, apply basic kitchen skills including culinary preparation foundations, basic kitchen principles, exploration of industry offerings, identification and use of industry equipment, and cooking methods. Critical thinking, practical problem solving and food service industry opportunities will be emphasized. Students will take the ServSafe Food Handlers assessment and prepare for the workforce through assisting in running the Culinary Arts Cafe.

Culinary Arts 1

Grades 10-12

2 Credits

Prerequisite: *Introduction to Culinary Arts*

Students in Culinary Arts 1 will take information learned in Intro to Culinary and apply it to direct, hands on kitchen production. It will include restaurant operations, catering and special event opportunities. We will be incorporating in depth planning, production and serving of foods. Students will run the Culinary Arts Cafe as a major portion of the course. Critical thinking, practical problem solving and food service industry opportunities will be emphasized. Students will take the ServSafe Food Protection Managers Certification. Fees required for chef coat and FCCLA dues.

Culinary Arts 2

Grades 11-12

2 Credits

Prerequisite: *Culinary Arts 1*

Culinary Arts 2 students will continue to build the foundations learned in Culinary Arts 1. Students will apply kitchen safety and sanitation, nutritional principles, and advanced food-preparation techniques. Students complete work-based learning in venues such as the a la carte kitchen, dining room, and catered functions.



Student Organizations

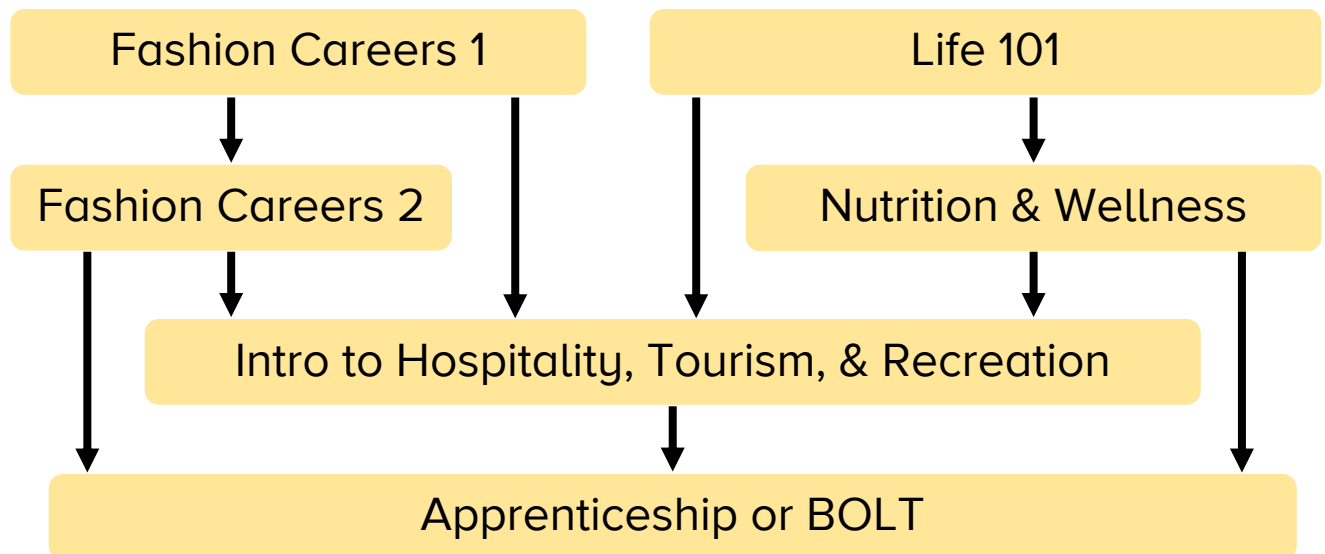
Available credentials:

- Culinary Arts Assessment
- ProStart Certification Examinations
- ServSafe Manager Certification Examination





Family & Consumer Science



What you can do:

Selected Occupation(s)	Median Wage	Education
Designers	\$59,550	Bachelor's or more
Art Directors	\$90,060	Bachelor's or more & Work Experience
Hosts and Hostesses	\$20,820	High School Diploma & Certification
Manager	\$131,670	Bachelor's or more & Work Experience
Recreation Workers	\$27,590	Bachelor's or more & Certification
Umpires, Referees, and Other Sports Officials	\$35,010	Bachelor's or more & Work Experience
Public Relations Specialists	\$78,980	Bachelor's or more
Writers and Authors	\$67,090	Bachelor's or more & Work Experience
Retail Workers Supervisors	\$45,170	Associate's or more & Certification

Family & Consumer Science Courses

Fashion Careers 1	
Grades 9-12	1 Credit
Fashion Careers will offer the student an opportunity to explore principles of clothing design through pattern methods. Emphasis is placed on design principles, garment construction techniques, and exploring textiles.. Learning experiences will consist of classroom instruction, lab, work, field trips, and guest speakers.	
Fashion Careers 2	
Grades 10-12	1 Credit
Prerequisite: <i>Fashion Careers 1</i>	
Students focus on technical skills identified as essential for careers in the fashion industry. Students continue to develop skills in fashion illustrating, draping, pattern making, garment construction, and compilation of a portfolio. Opportunities for entrepreneurship within the field of fashion design are examined. Work-based learning opportunities within the fashion industry are encouraged to provide opportunities for students to develop employability skills.	
Introduction to Hospitality, Tourism, and Recreation	
Grades 9-12	1 Credit
Students enrolled in Introduction to Hospitality, Tourism, and Recreation focus on developing professional skills and using emerging technologies to prepare for employment in this global industry, rich in diverse career opportunities. The program includes instruction in the industries of lodging, food and beverage, travel and tourism, and recreation and fitness.	
Life 101	
Grades 9-12	1 Credit
This course covers: career education, and job searches; basic cooking and nutrition; laundry; finding a life partner or not; sexual wellness; wedding planning; divorce; having a baby and parenting; renting and buying a house; buying a car and general maintenance; purchasing furniture; how to build credit and keep it; what to do if you lose your job; how to clean just about everything; handling health issues and finding a doctor; planning funerals and dealing with grief; manners and etiquette. The course content will be taught using experience based learning methods including hands-on work, field trips, role play, and case study models.	
Nutrition & Wellness	
Grades 9-12	1 Credit
Students enrolled in Nutrition and Wellness focus on understanding wellness, investigating principles of nutrition, using science and technology in food management, ensuring food safety, planning menus, preparing food, and exploring careers in the field of nutrition and wellness. Critical thinking and practical problem solving are emphasized. Food preparation labs are an integral part of this curriculum and students should expect group work.	

Available credentials:

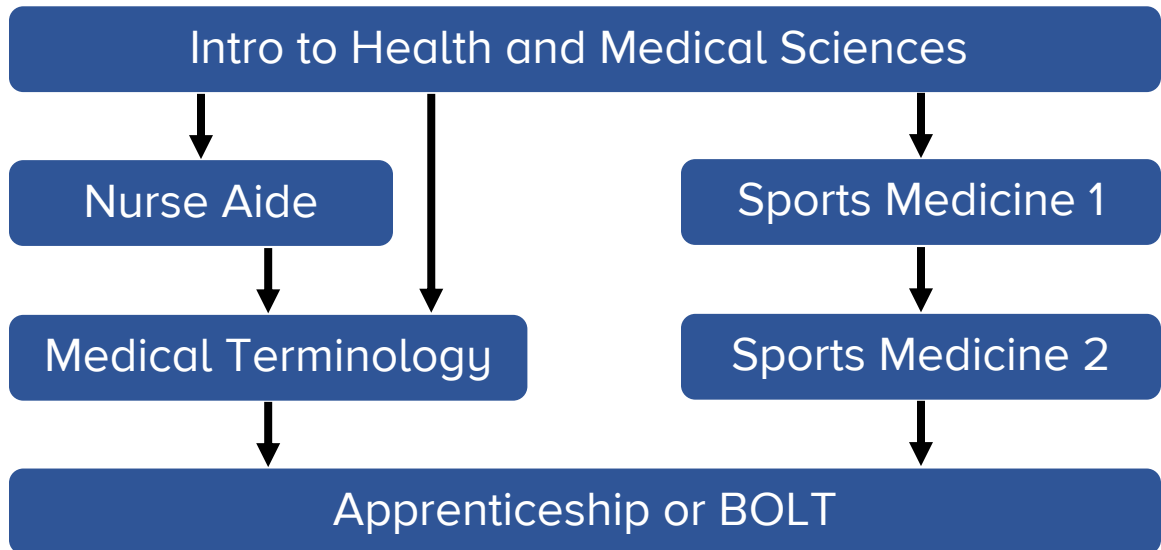
- Fashion, Textiles, and Apparel Assessment
- Food Science Fundamentals Assessment
- Workplace Readiness Skills for the Commonwealth Examination

Student Organization





Health Science



What you can do:

Selected Occupation(s)	Median Wage	Education
Nursing Assistants	\$27,920	High School Diploma & Certification
Licensed Practical Nurses	\$42,550	Associate's or more & Training/Certification
Registered Nurses	\$67,990	Associate's or more & Training/Certification
Nurse Practitioners	\$102,240	Bachelor's or more & Training/Certification
Medical and Health Information Technicians	\$42,290	Associate's or more & Training/Certification
Radiologic Technologists	\$59,370	Associate's or Some College & Certification
Emergency Medical Technicians and Paramedics	\$34,400	Associate's or more & Training/Certification
Occupational Health and Safety Specialists	\$67,910	Bachelor's or more

Health Science Courses

Introduction to Health and Medical Sciences

Grades 9-12

1 Credit

This course introduces the student to a variety of healthcare careers and develops basic skills required in all health and medical sciences. It is designed to help students understand the key elements of the U.S. healthcare system and to learn basic healthcare terminology, anatomy and physiology for each body system, pathologies, diagnostic and clinical procedures, therapeutic interventions, and the fundamentals of traumatic and medical emergency care. Throughout the course, instruction emphasizes safety, cleanliness, asepsis, professionalism, accountability, and efficiency within the healthcare environment. Students also begin gaining job-seeking skills for entry into the health and medical sciences field.

Medical Terminology

Grades 10-12

1 Credit

Prerequisite: *Introduction to Health and Medical Sciences*

Medical Terminology is designed to help students learn common medical terms essential for safe patient care. Topics are presented in logical order, beginning with each body system's anatomy and physiology and progressing through pathology, laboratory tests and clinical procedures, therapeutic interventions, and pharmacology. Students learn concepts, terms, and abbreviations for each topic.

Nurse Aide

Grades 11-12

2 Credits

Prerequisite: *Students must be 16 years old when course begins*

Nurse Aide emphasizes the study of nursing occupations as related to the healthcare system. Students study normal growth and development, simple body structure and function, and medical terminology and are introduced to concepts of infection prevention and disease processes. They receive elementary skill training in patient-nurse aide relationships, measuring and recording of vital signs, cardiopulmonary resuscitation, and general care of the patient. Students learn advanced skill training in areas such as catheter care, range of motion, bowel and bladder training, care of the dying, selected procedures for maternal and infant care, and admission and discharge procedures. Students learn diseases and body systems as related to advanced clinical care of the acute medical-surgical patient, the chronically ill, and the elderly. On-the-job instruction in a licensed nursing home is part of the course. Upon completion of the nurse aide program, the student is eligible to take the nurse aide certification exam that leads to employment as a certified nurse aide in hospitals and nursing homes.

Sports Medicine 1

Grades 9-12

1 Credit

This course is designed for students in grades eleven and twelve who have interest in pursuing the fields of sports medicine, physicians/doctor, physical therapy, nursing, human anatomy/physiology, personal trainer, exercise physiology and/or becoming a certified athletic trainer. This class will offer students a foundation of human anatomy and physiology and apply this knowledge in the rapidly growing field of sports medicine.

Sports Medicine 2

Grades 9-12

1 Credit

Prerequisite: *Sports Medicine 1*

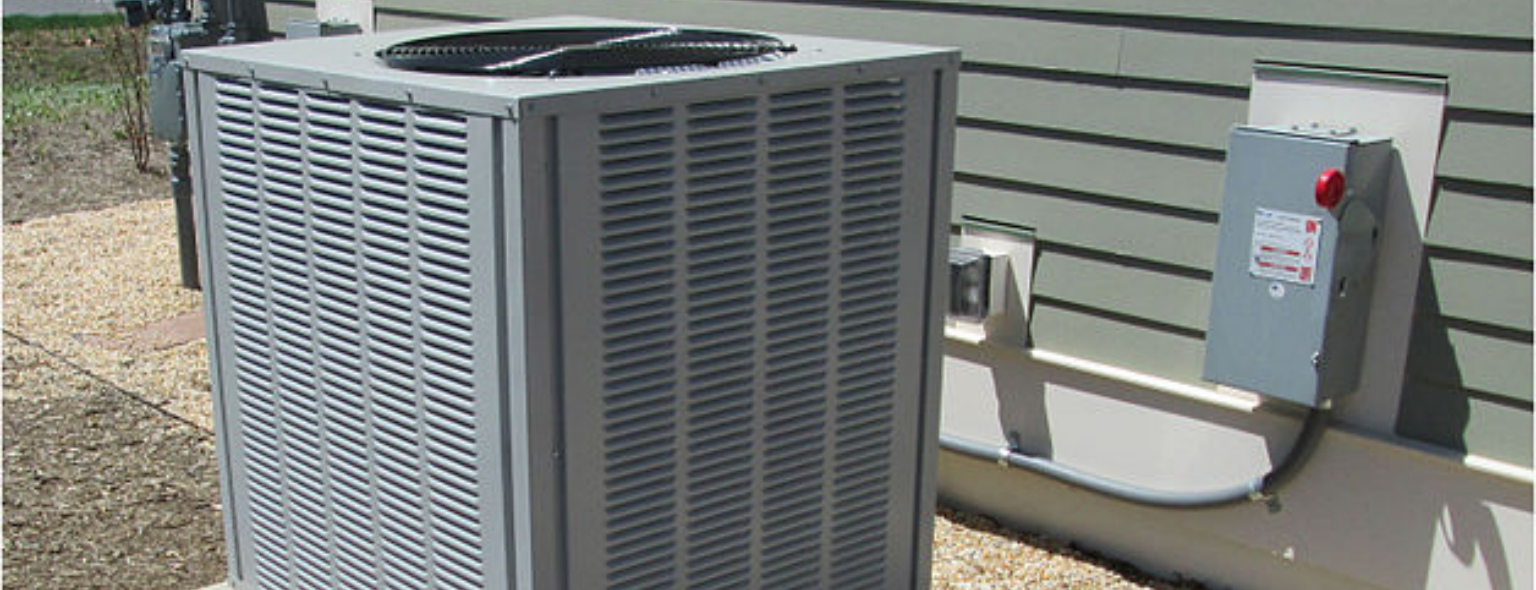
Students will apply their knowledge of muscle and joint anatomy, function to design and implement rehabilitation programs, as well as strength and conditioning programs. Students will also learn advanced taping, splinting, and first aid techniques. This course will also cover nutrition, performance enhancing drugs and other current topics as they relate to sports medicine and athletic training. Advanced Sports Medicine students will be required to serve after school hours assisting the athletic trainer during sporting events and practices.

Available credentials:

- National Nurse Aide Assessment Program (NNAAP) Examination
- Certified Personal Trainer Examination

Student Organization





Heating, Ventilation, Air Conditioning, & Refrigeration

Heating, Ventilation, Air Conditioning, &
Refrigeration (HVAC-R) 1



Heating, Ventilation, Air Conditioning, &
Refrigeration (HVAC-R) 2



Apprenticeship or BOLT

What you can do:

Selected Occupation(s)	Median Wage	Education
HVAC-R System Mechanics and Installers	\$49,520	Associate's or more & Training/Certification
Electricians	\$50,060	Associate's or more & Training/Certification
Plumbers, Pipefitters, and Steamfitters	\$48,930	High School Diploma & Certification
Construction Managers	\$111,680	Bachelor's or more & Training/Certification
Construction and Building Inspectors	\$59,000	Associate's or more & Training/Certification
Sheet Metal Workers	\$47,770	High School Diploma & Certification
Electrical Engineering Technicians	\$69,720	Associate's or more & Training/Certification
Electrical Engineers	\$106,090	Bachelor's or more

Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R) Courses

Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R) 1

Grades 9-12

2 Credits

In this first course of the instructional program, students are taught to professionally install, repair, and maintain the operating conditions of heating, air-conditioning, and refrigeration systems. Students work with piping and tubing, study the principles of heat and electricity, install duct systems, and comply with EPA regulations. Completion of the two-course sequence may prepare students for a number of certification exams, which are helpful for employment in a variety of HVACR occupations.

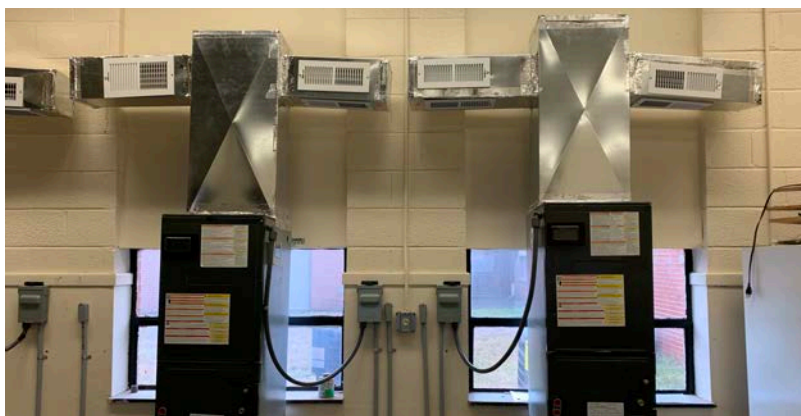
Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R) 2

Grades 10-12

2 Credits

Prerequisite: *Heating, Ventilation, Air Conditioning, & Refrigeration (HVAC-R) 1*

This instructional program teaches students to professionally install, repair, and maintain the operating conditions of heating and cooling systems. Students also explore emerging technologies, EPA regulations and conservation techniques, and R-410A systems. Completion of this sequence may prepare students for the EPA 608 Industry Certification, helpful for employment in a variety of HVAC-R occupations.



Student Organization

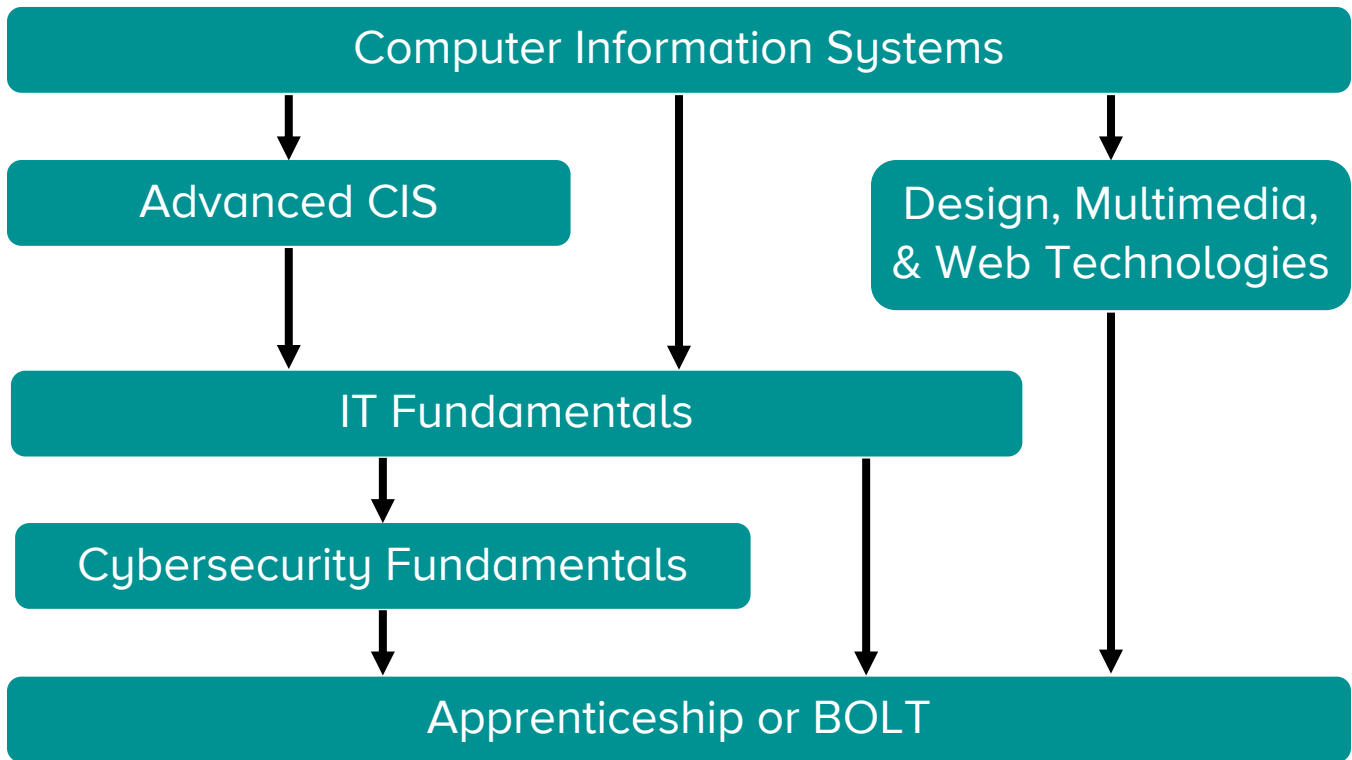
Available credentials:

- EPA Technician Examinations
- Air Conditioning Employment Ready Examination





Information Technology



What you can do:

Selected Occupation(s)	Median Wage	Education
Computer Programmers	\$95,520	Bachelor's or more
Electrical Engineering Technicians	\$69,720	Associate's or more & Training/Certification
Production and Operating Supervisors	\$64,100	High School Diploma & Certification
Information and Record Clerks	\$43,670	Associate's or more & Certification
Computer & Information Systems Managers	\$169,660	Bachelor's or more & Work Experience
Computer User Support Specialists	\$55,960	Bachelor's or more
Software Application Developers	\$111,010	Bachelor's or more & Work Experience
Computer Occupations	\$104,680	Bachelor's or more
Graphic Designers	\$59,550	Bachelor's or more

Information Technology Courses

Computer Information Systems

Grades 9-12

1 Credit

Students apply problem-solving skills to real-life situations through word processing, spreadsheet, database, and multimedia presentation software, and through integrated software activities. Students work to explore computer concepts, operating systems, networks and telecommunications, and emerging technologies.

Computer Information Systems, Advanced

Grades 10-12

1 Credit

Prerequisite: *Computer Information Systems*

Students apply problem-solving skills to realistic situations through advanced integrated software applications, including printed, electronic, and Web publications. Students explore advanced computer maintenance activities, web development and emerging technology in order to obtain success on the Microsoft Office Certification Exam.

Cybersecurity Fundamentals

Grades 10-12

1 Credit

Prerequisite: *IT Fundamentals*

Cybersecurity affects every individual, organization, and nation. This course focuses on the evolving and all-pervasive technological environment with an emphasis on securing personal, organizational, and national information. Students will be introduced to the principles of cybersecurity, explore emerging technologies, examine threats and protective measures, and investigate the diverse high-skill, high-wage, and high-demand career opportunities in the field of cybersecurity.

Design, Multimedia, & Web Technologies

Grades 9-12

1 Credit

Students develop proficiency in using desktop publishing software to create a variety of printed and electronic publications. Students will incorporate journalistic principles in design and layout of publications. Students work with sophisticated hardware and software to develop Web sites and multimedia presentations.

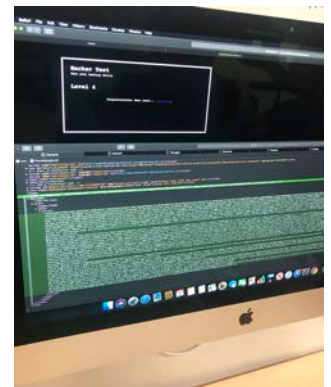
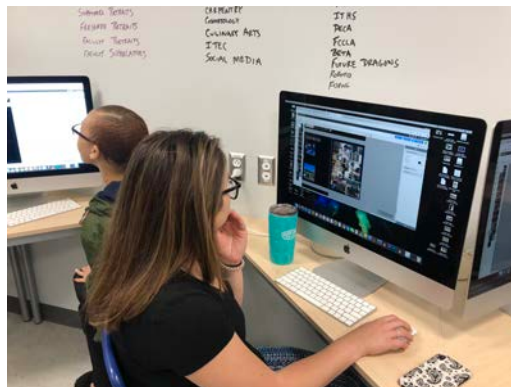
IT Fundamentals

Grades 9-12

1 Credit

Students will learn bedrock elements of computer science and programming through a broad exploration of computer applications, software platforms, and career pathways. In addition to basic computing principles, areas of focus include web design and interactivity, digital creation and animation, and introduction to coding languages. Students will also explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employment skills.

Student Organizations

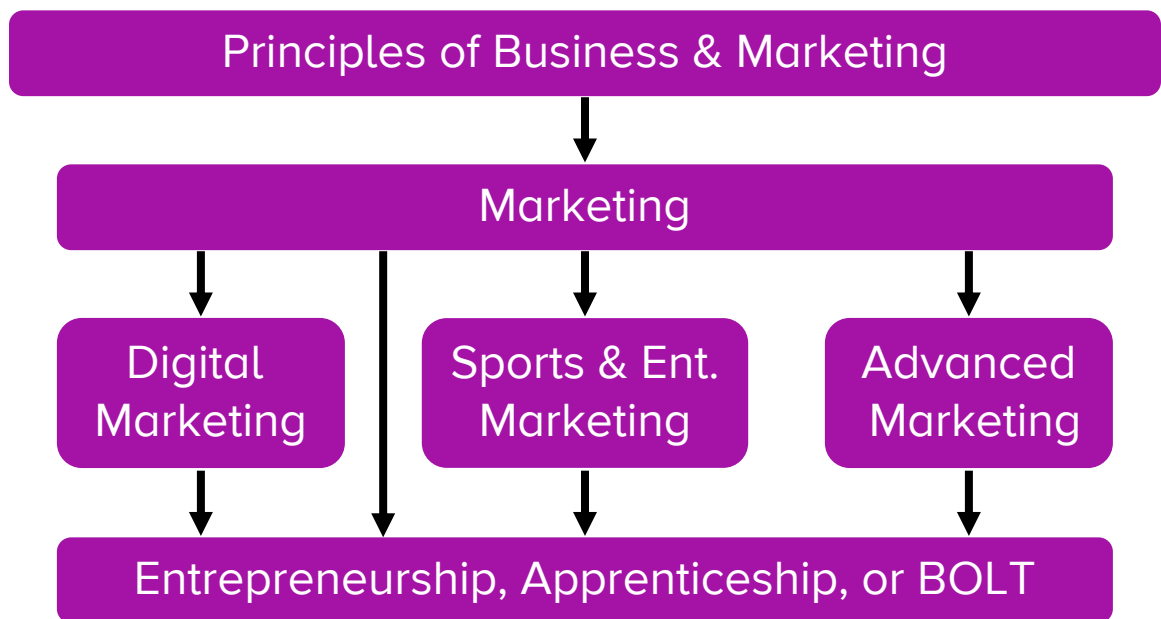


Available credentials:

- IC3 Digital Literacy Certification Examination
- Microsoft Office Specialist (MOS) Examinations



Marketing



What you can do:

Selected Occupation(s)	Median Wage	Education
Marketing Managers	\$167,490	Bachelor's or more & Work Experience
Retail Sales Supervisors	\$45,170	Associate's or more & Certification
Parts Salespersons	\$31,190	High School Diploma & Certification
Retail Salespersons	\$26,120	Associate's or more & Certification
Real Estate Sales Agents	\$64,290	Bachelor's or more & Work Experience
Sales Representatives	\$77,270	Bachelor's or more & Work Experience
Property, Real Estate, and Community Managers	\$67,980	Bachelor's or more
Driver or Sales Workers	\$28,060	High School Diploma & Certification
Public Relations Specialists	\$78,980	Bachelor's or more

Marketing Courses

Digital Marketing

Grades 9-12

1 Credit

Students receive an introduction to marketing functions and the business plan and study Internet marketing's role in the global economy. Students gain knowledge of the tools and techniques used in Internet marketing and learn how to design a Website. They explore ethical, legal, and security aspects and prepare for a career in Internet marketing. Computer/technology applications supporting this course are studied.

Entrepreneurship Education

Grades 10-12

1 Credit

This course introduces students to the exciting world of creating, owning, and launching their own business. Students will learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle.

Marketing

Grades 10-12

1 Credit

Marketing provides students with instruction that enables them to obtain and succeed in their chosen marketing occupations and explores a variety of marketing topics. Students concentrate on developing competencies needed by marketing workers in the areas of selling, advertising, display, operations, and product/service technology. Students will identify career opportunities in marketing, develop a resume, generate a career portfolio, and identify current job opportunities in marketing using traditional and nontraditional job search strategies.

Advanced Marketing

Grades 11-12

1 Credit

Prerequisite: *Marketing*

In Advanced Marketing, you will get the opportunity to study a variety of marketing principles on a higher level. This is a very project oriented class and includes required outside reading. Instruction focuses on human relations, communications, selling, buying, free enterprise, advertising and promotion, finance and accounting, management and business operations, distribution, and inventory. In addition students will explore the internet as a job/career tool. This course does involve off-site field trips.

Principles of Business and Marketing

Grades 10-12

1 Credit

Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxation, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens. The real-world impact of technology, effective communication, and interpersonal skills is evident throughout the course. This course also supports career development skills and explores career options.

Sports & Entertainment Marketing

Grades 10-12

1 Credit

Sports and Entertainment Marketing takes students on a step-by-step journey through the world of marketing. Students encounter and learn about the key functions of marketing and how those functions are applied to sports and entertainment. This course will explore the following topics: the definition and scope of Sports and Entertainment Marketing, College and Amateur Sports, the dynamics of Professional Sports, trends in marketing products and Services through Sports and public images. The course does include off-site field trips and outside reading with access to a television.

Student Organization

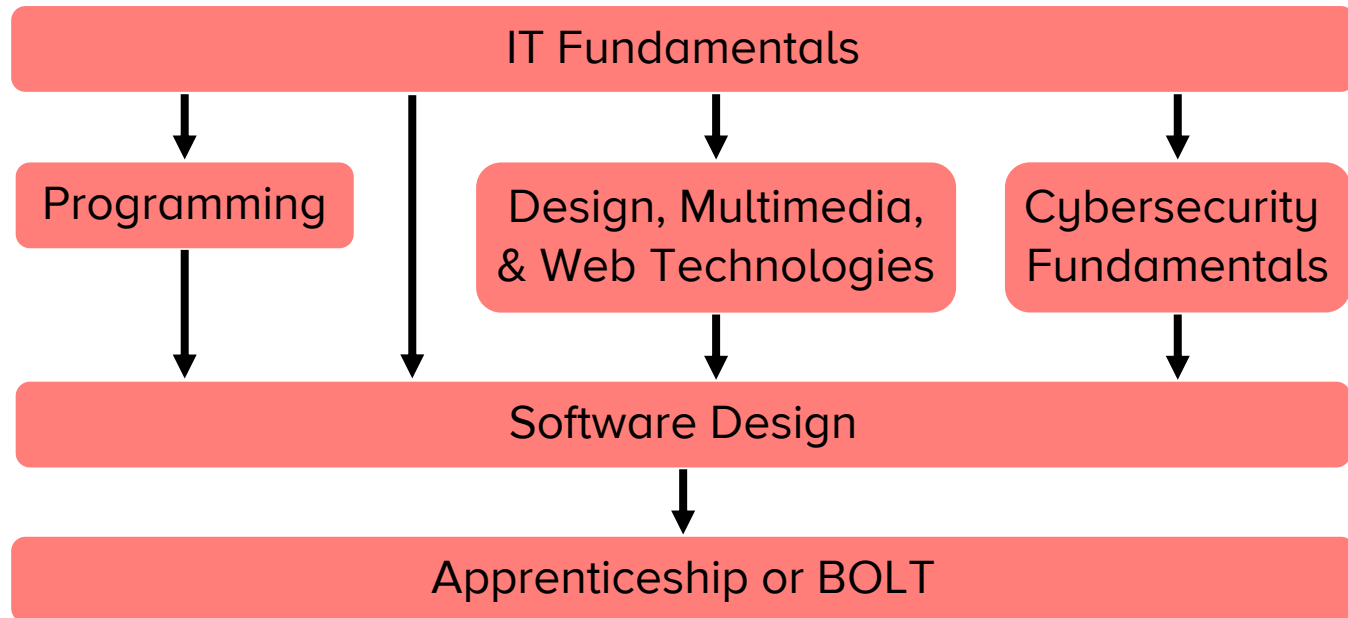
Available credentials:

- IC3 Digital Literacy Certification Examination
- Customer Service and Sales Certification Assessment





Science, Technology, Engineering, & Mathematics



What you can do:

Selected Occupation(s)	Median Wage	Education
Computer Programmers	\$95,520	Bachelor's or more
Electrical Engineering Technicians	\$69,720	Associate's or more & Training/Certification
Production and Operating Supervisors	\$64,100	High School Diploma & Certification
Information and Record Clerks	\$43,670	Associate's or more & Certification
Computer & Information Systems Managers	\$169,660	Bachelor's or more & Work Experience
Computer-Controlled Machine Tool Operators	\$40,540	High School Diploma & Certification
Software Application Developers	\$111,010	Bachelor's or more & Work Experience
Production, Planning, and Expediting Clerks	\$51,100	Associate's or more & Certification
Graphic Designers	\$59,550	Bachelor's or more

Science, Technology, Engineering, & Mathematics Courses

Cybersecurity Fundamentals

Grades 10-12

1 Credit

Prerequisite: *IT Fundamentals*

Cybersecurity affects every individual, organization, and nation. This course focuses on the evolving and all-pervasive technological environment with an emphasis on securing personal, organizational, and national information. Students will be introduced to the principles of cybersecurity, explore emerging technologies, examine threats and protective measures, and investigate the diverse high-skill, high-wage, and high-demand career opportunities in the field of cybersecurity.

Design, Multimedia, & Web Technologies

Grades 10-12

1 Credit

Students develop proficiency in using desktop publishing software to create a variety of printed and electronic publications. Students will incorporate journalistic principles in design and layout of publications. Students work with sophisticated hardware and software to develop Web sites and multimedia presentations.

IT Fundamentals

Grades 9-12

1 Credit

Students will learn bedrock elements of computer science and programming through a broad exploration of computer applications, software platforms, and career pathways. In addition to basic computing principles, areas of focus include web design and interactivity, digital creation and animation, and introduction to coding languages. Students will also explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employment skills.

Programming, Advanced

Grades 10-12

1 Credit

Building on their foundation of programming skills, Advanced Programming students use object-oriented programming to develop database applications, interactive multimedia applications including game applications, mobile applications, and Web applications. Students continue to develop their employability skills as they research pathways for continuing education and careers in the information technology industry and engage in various career-building activities.

Social Media Production

Grades 9-12

1 Credit

This course offers students a hands-on opportunity to study all aspects of video and media production. Students will conceptualize, plan, and contribute through all production phases: pre-production, production, and post-production. In addition, students will practice various methods of gathering and recording information and creating novel content to create a variety of video and media productions while operating studio editing software and video and audio equipment.

Software Design

Grades 9-12

1 Credit

Building on skills developed in IT Fundamentals, students will explore programming and software design basics through study of specific programming languages, including Python, Java, and JavaScript. This course aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration. Students will utilize various platforms to enhance their design skills, include Raspberry Pi, Web development, GIS and simulation. Software Design helps students develop programming expertise and explore the workings of the Internet. Projects and problems, both group and extended independent, include app development, visualization of data, and cyber-security.

Student Organization

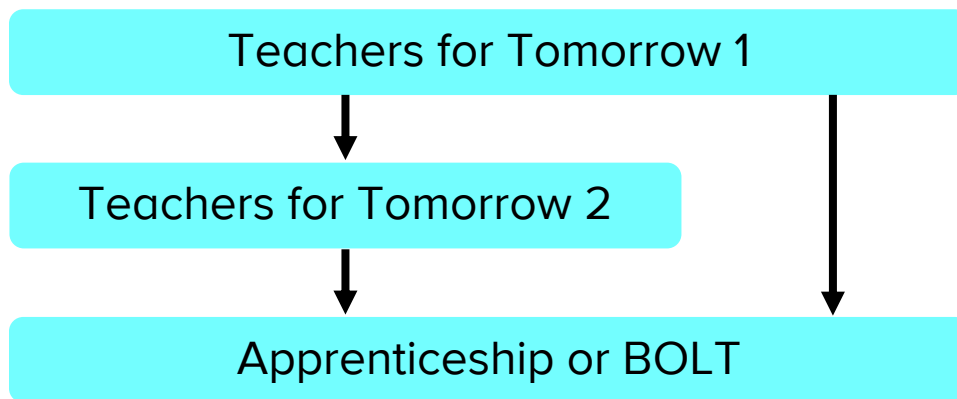
Available credentials:

- IC3 Digital Literacy Certification Examination
- Web Design Assessment





Teacher Education



What you can do:

Selected Occupation(s)	Median Wage	Education
Career/Technical Education Teachers	\$66,800	Bachelor's or more, Work Experience, & Certification
Preschool Teachers	\$39,180	Bachelor's or more & Certification
Elementary School Teachers	\$68,460	Bachelor's or more & Certification
Middle School Teachers	\$67,770	Bachelor's or more & Certification
High School Teachers	\$69,890	Bachelor's or more & Certification
Special Education Teachers	\$74,950	Bachelor's or more & Certification
Teacher Assistants	\$28,890	Associate's or more & Certification
Childcare Workers	\$23,820	High School diploma & Certification

Teacher Education Courses

Teachers for Tomorrow 1

Grades 11-12

1 Credit

Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession and allows secondary students to explore careers in education. Students build a foundation for teaching; learn the history, structure and governance of teaching; apply professional teaching techniques in the classroom and field experience; and reflect on their teaching experiences. Additional educational leadership opportunities are offered through the student organization, Educators Rising.

Teachers for Tomorrow 2

Grade 12

1 Credit

Prerequisite: *Teachers for Tomorrow 1*

Students continue to explore careers in the Education and Training Cluster and pathways. This course provides the opportunity for students to prepare for careers in education as they research postsecondary options, learn about the process of teacher certification in Virginia, and participate in a practicum experience.



Greene County
Teacher's
Starting Salary:
\$45,204



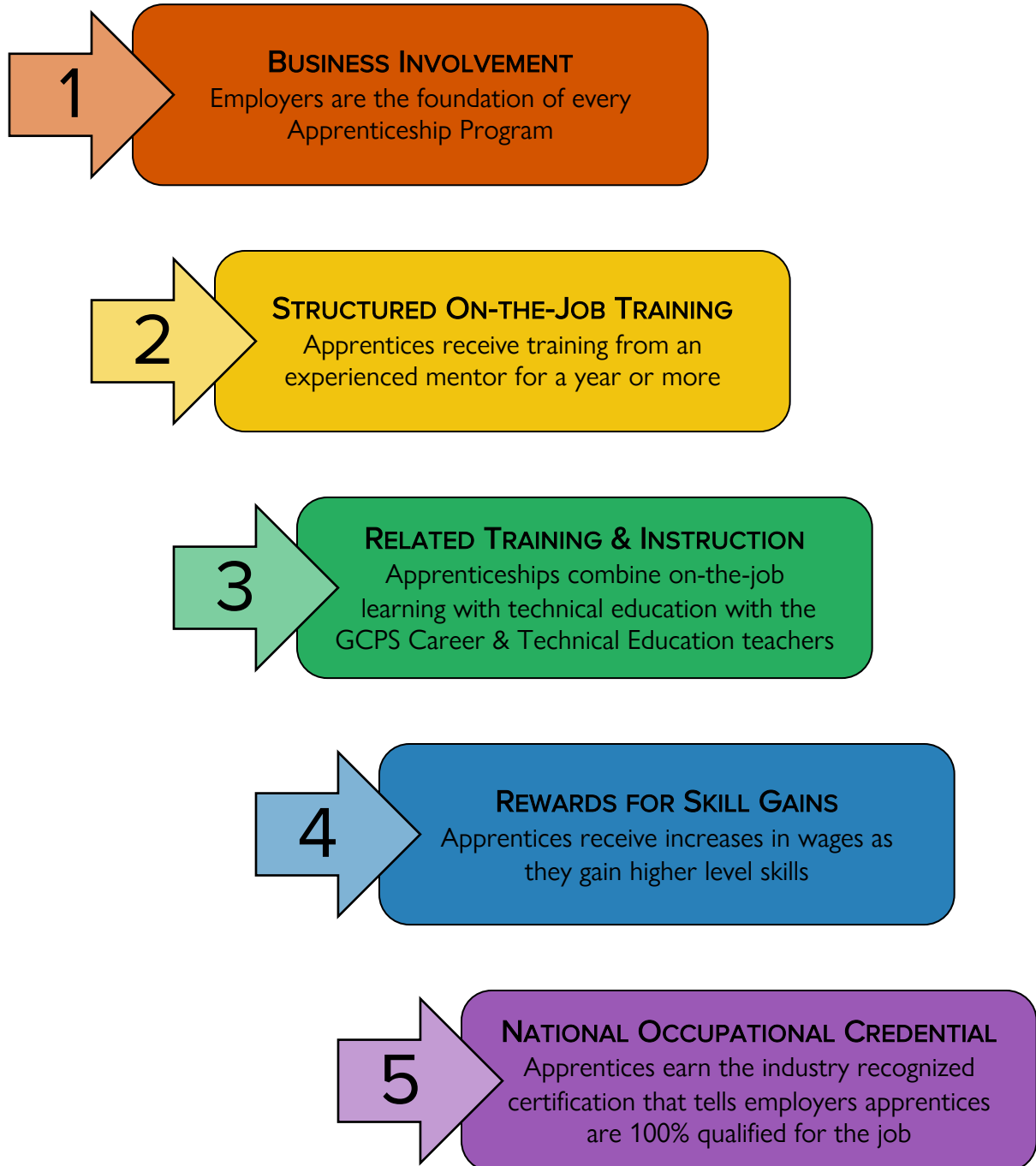
Student Organization

Available credentials:

- ParaPro Assessment
- Education Fundamentals Assessment



Youth & Registered Apprenticeships



Youth & Registered Apprenticeships are structured training programs that combine on-the-job training (OJT) and related technical instruction to train employees in occupations that demand a high level of skill. Occupations in construction, manufacturing, business, and the service industries readily use apprenticeships in both the private and public sectors. The apprenticeship model works for the student and employers of any size, offering an investment in the skill levels needed for the workforce.

Contact the Greene County Technical Education Center office for more information by phone at 434.939.9005 or by email at CTE@greencountyschools.com.

CTE Career Success STARS



Humberto Otero II

Automotive Technician, First Team Auto Mall, Roanoke

- Hidden Valley High School and Arnold R. Burton Technology Center, Roanoke County Public Schools
- CTE studies: Automotive Technology I, II, III
- Additional studies: Volkswagen Master Technician; Virginia State Vehicle Inspector



Sayiddah McCree

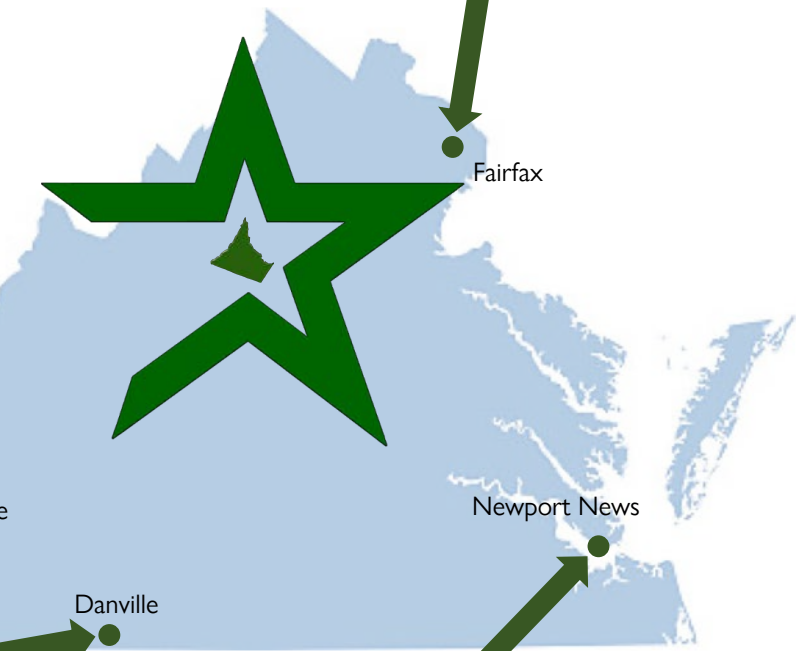
Senior Project Manager, Koenigsberg Engineering, Chicago & New York

- George Washington High School, Danville City Public Schools
- CTE studies: Drafting; Architectural Drawing and Design; Principles of Technology; Computer Networking Hardware Operations
- Additional studies: Bachelor's of Architecture and Master's of Integrated Building Delivery, Illinois Institute of Technology, Chicago

Nicole Sanchez

Manager, Events and Programs, Washington Wizards and Washington Mystics, Washington, D.C.

- Mount Vernon High School, Fairfax County Public Schools
- CTE studies: Sports, Entertainment, and Recreation Marketing
- Additional studies: Bachelor of Science in Sport Management, George Mason University



Raquel Babb

Assistant to the Director of Special Events for Athletics, College of William & Mary, Williamsburg

- Heritage High School, Newport News City Public Schools
- CTE studies: Business Management; Fashion Marketing; Computer Information Systems; Advanced Computer Information Systems; Keyboarding
- Additional studies: Bachelor's in Retail Marketing, Virginia Commonwealth University