

CTE Programs at a Glance

Advanced Biotechnology

One year

Occupation Opportunities

- Animal Scientist
- Biochemist
- Environmental Scientist
- Forensic Scientist
- Ecologist
- Biologist

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Hon Biotech Foundations in Agriculture & Environmental Science
- Hon Biotech Applications in Agriculture
- AP Biology

Preferred Aptitudes

- Strong in Math and Sciences
- Completed or concurrently in Chemistry
- Completed Bio 1

Advanced Engineering & Manufacturing

One year

Occupation Opportunities

- Mechanical Engineer
- Automated Manufacturing Technician
- Manufacturing Systems Engineer

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Hon Manufacturing Systems I
- Hon Manufacturing Systems II
- Hon Materials & Processes

Preferred Aptitudes

- Strong mathematics ability

Agriculture, Floriculture, and Greenhouse Systems

One year

Occupation Opportunities

- Botanist
- Soil and Plant Scientist
- Nursery & Greenhouse Manager
- Agricultural Engineer

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Hon Intro to Plant Systems
- Hon Greenhouse Plant Production & Management
- Hon Floriculture

Preferred Aptitudes

- Physical endurance to stretch, reach, bend, stoop and stand for long periods of time
- Tolerance for pesticides, fertilizers, and other chemicals

Automotive Technology

Two year

Occupation Opportunities

- Small Engine Mechanic
- Diesel Service Technician
- Automotive Technician

Certification Opportunities

- Workplace Readiness Skills
- Safety and Pollution Prevention (S/P2)
- Virginia State Inspection License
- **Student ASE Maintenance & Light Repair (MLR) Exam**

Credits for this Program

- Year 1 Hon Auto Technology I
- Hon Auto Technology II
- Year 2 Hon or DE Auto Technology III

Preferred Aptitudes

- Physical endurance
- Tolerance for noise, fumes, dirt, and dust
- Proficiency in mathematics and science

Baking & Pastry Arts

Two year

Occupation Opportunities

- Bakery Pastry Chef
- Executive Chef
- Cake Decorator
- Food Service Manager
- Meeting & Convention Planner

Certification Opportunities

- ServSafe Food Handler Certification
- ServSafe Manager Certification
- Workplace Readiness Skills

Credits for this Program

- Year 1 Hon Culinary Arts I Baking
- Hon Baking & Pastry OR Hon or C level
- Economics/Persona I Finance
- Year 2 Hon Culinary Arts II—Baking (2 Credits)
- Hon Catering/Banquet

Preferred Aptitudes

- Proficient with fractions
- Able to stand for long periods of time
- Strong dexterity skills
- Able to lift 30 pounds

Business & Real Estate

One year

Occupation Opportunities

- Real Estate Broker
- Real Estate Sales Agents
- Financial & Investment Analysts
- Entrepreneurs
- Loan Officers

Certification Opportunities

- Workplace Readiness
- Real Estate Salesperson Examination (Can test at 17, must be at least 18 years old to hold a license)

Credits for this Program

- Business Management
- Business Law
- Real Estate

Carpentry

One year

Occupation Opportunities

- Carpenter
- General Contractor

Certification Opportunities

- Workplace Readiness Skills
- NCCER Core Certification
- OSHA-10 Certification

Credits for this Program

- Carpentry I
- Carpentry II

Preferred Aptitudes

- Physical endurance to stoop, bend, and stand for long periods of time
- Work with precise standards of accuracy
- Tolerance for noise, dust, and dirt
- Physical strength to lift heavy objects
- Good mathematical ability

Collision Repair Technology

Two year

Occupation Opportunities

- Auto Collision Technician
- Auto Refinish Technician
- Auto Body Damage Estimator

Certification Opportunities

- Workplace Readiness Skills
- Safety and Pollution Prevention (S/P2)
- Student ASE certifications
- National Automotive Student Skills Standards Assessment

Credits for this Program

- Year 1 Honors Auto Body
- Technology I
- Honors Auto Body Technology II
- Year 2 Auto Body Technology III

Preferred Aptitudes

- Physical endurance to stretch
- Tolerance for noise, fumes, dirt and dust

Commercial Photography

One year

Occupation Opportunities

- Commercial Photographer

Certification Opportunities

- Workplace Readiness Skills
- Adobe Photoshop Certification

Credits for this Program

- Commercial Photo I
- Commercial Photo II

Preferred Aptitudes

- Self-motivated and able to work independently
- Must be able to sit at a computer for an extended period of time
- Previous experience with computer skills and computer art classes recommended

Computer Networking

One year

Occupation Opportunities

- Network Systems Administrator
- Information Technology Specialist

Certification Opportunities

- CompTIA A+
- **CompTIA Network+**

Credits for this Program

- Hon or DE Cisco I, II, III, & IV
- Hon or DE Cyber Security Fundamentals

Preferred Aptitudes

- Ability to remain focused while working at a computer for long periods of time

Computer Systems Technology

One year

Occupation Opportunities

- Computer User Support Specialists
- Computer Systems Analysts
- Computer Network Support Specialists

Certification Opportunities

- Workplace Readiness
- Comp TIA A+

Credits for this Program

- Hon Computer Systems Technology I
- Hon Computer Systems Technology II

Preferred Aptitudes

- Ability to remain focused while working at a computer for a long periods of time

Cosmetology

Two year

Occupation Opportunities

- Cosmetologist
- Barber

Certification Opportunities

- Workplace Readiness Skills
- VA State Board License in Cosmetology

Credits for this Program

- Year 1 Hon Cosmetology I
- Year 2 Hon Cosmetology II

Preferred Aptitudes

- Artistic ability
- Excellent attendance
- Good interpersonal skills and positive attitude
- Physical endurance to stand for long periods

Criminal Justice

One year

Occupation Opportunities

- Police Officer Special Agent
- Forensic Science Technician
- Attorney
- Corrections Officer

Certification Opportunities

- Workplace Readiness Skills
- CERT Disaster Training
- FEMA Certifications for National Incident Management (NIMS)

Credits for this Program

- Criminal Justice I
- Criminal Justice II

Preferred Aptitudes

- Genuine interest in a law enforcement career
- Ability to stay calm in an emergency
- Self-discipline

Culinary Arts

Two year

Occupation Opportunities

- Cook
- Executive Chef
- Food Service Manager
- Meeting & Convention Planner

Certification Opportunities

- ServSafe Food Handler Certification
- ServSafe Manager Certification
- Workplace Readiness Skills

Credits for this Program

- Year 1 Hon Culinary Arts I
- Hon Restaurant Operations OR Hon or C level Economics/Pers Finance
- Year 2 Hon Culinary Arts II
- Hon Catering/Banquet Proficient with fractions

Preferred Aptitudes

- Able to stand for long periods of time
- Strong dexterity skills

Dental Careers

Two year

Occupation Opportunities

- Dental Assistant
- Dentist
- Radiologic Technologist

+Certification Opportunities

- Dental Assisting Assessment
- X-Ray Certification
- **Workplace Readiness Skills**

Credits for this Program

- Year 1 Hon Dental Occupations I
- Hon Medical Terminology OR
- Hon or C level Economics/Pers Finance
- Year 2 Hon Dental
- Occupations II
- Hon Intro to Health & Medical Sciences

Preferred Aptitudes

- Good communication skills
- Strong responsibility and enthusiasm
- Work well with patients who are frightened or upset
- Strong in Biology and Chemistry

Digital Arts

One year

Occupation Opportunities

- Graphic Designer
- Animator
- Illustrator

Certification Opportunities

- Adobe Illustrator Certification
- Workplace Readiness Skills

Credits for this Program

- Graphic Communications Systems
- Digital Visualization
- Modeling & Simulation

Preferred Aptitudes

- Self-motivated and able to work independently
- Must be able to sit at a computer for an extended period of time
- Previous experience with computer skills and computer art classes recommended

Emergency Telecommunications

One year

Occupation Opportunities

- 911 Telecommunications Dispatcher
- Police Officer
- EMT

Certification Opportunities

- Workplace Readiness Skills
- FEMA Certifications for National Incident Management

Credits for this Program

- Criminal Justice I
- Emergency Medical Telecommunications

Preferred Aptitudes

- Ability to stay calm in an emergency
- Genuine interest in a law enforcement career
- Good listening skills

Early Childhood Education

Two year

Occupation Opportunities

- Child Care Worker
- Elementary School Teacher
- Teacher Assistant

Certification Opportunities

- CPR/First Aid and AED
- Child Development Associate (CDA)
- Workplace Readiness Skills

Credits for this Program

- Year 1 Early Childhood Ed I
- Intro to Early Childhood Ed
- Year 2 Early Childhood Ed II
- Work Based Learning

Preferred Aptitudes

- Ability to work independently with small children
- Enjoy teaching and supervising children
- Good interpersonal skills and initiative
- Demonstrate adaptability to change

Electricity

One year or Two Year

Occupation Opportunities

- Electrician
- General Contractor

Certification Opportunities

- Workplace Readiness Skills
- NCCER Certifications
- OSHA-10 Certification

Credits for this Program

- Year 1 Electricity 1
- Electricity 2
- Year 2 Electricity 3
- Work Based Learning

Preferred Aptitudes

- Physical endurance to crouch, bend, and stand for long periods of time
- Work with precise standards of accuracy
- Good mathematical ability

Energy Transmission, Distribution, and Storage

Two year

Occupation Opportunities

- Power Distributor/Grid Dispatcher
- Electrical Engineer
- Environmental Engineer
- Engineering Technologist

Certification Opportunities

- Workplace Readiness

Credits for this Program

- Year 1
 - o Energy Transmission and Distribution
 - o Energy Source Life Cycle
 - o Renewable Energy
- Year 2
 - o Energy Supply: Sustainability and Efficiency
 - o Energy Demand: Sustainability and Efficiency
 - o Energy Transmission and Distribution, Advanced

Preferred Aptitudes

- Proficient with Algebraic functions and units of measurement

Game Development & Security Technology

Two year

Occupation Opportunities

- Software Developer
- Database Architects
- Web Developers
- Software Quality Assurance Analysts

Certification Opportunities

- Workplace Readiness
- Unity Certified User Examinations (Programmer)

Credits for this Program

- Year 1
 - Programming
 - Game Design and Development
 - Advanced Game Design and Development
- Year 2
 - Advanced Programming
 - Cybersecurity Operations
 - Advanced Cybersecurity Operations

Preferred Aptitudes

- Strong aptitude in Algebra

Heating, Ventilation & Air Conditioning

One year

Occupation Opportunities

- HVAC Technician
- General Contractor

Certification Opportunities

- Workplace Readiness Skills
- NCCER HVAC Level 1
- EPA 608
- OSHA-10 Certification

Credits for this Program

- HVAC I
- HVAC II

Preferred Aptitudes

- Physical endurance to stand, bend, and stand for long periods of time
- Work with precise standards of accuracy
- Good mathematical ability

Hospitality & Tourism

One year

Occupation Opportunities

- Lodging & Food Service Manager
- Event Planner
- Concierge
- Travel Agent
- Recreation Worker

Certification Opportunities

- Workplace Readiness
- Certified Hospitality and Tourism Management Professional (CHTMP) Examination

Credits for this Program

- Introduction to Hospitality, Tourism and Recreation
- Hospitality, Tourism, and Recreation I
- Hospitality, Tourism, and Recreation II

Mechatronics & Robotics

One year

Occupation Opportunities

- Mechanical Engineer
- Automated Manufacturing Technician
- Manufacturing Systems Engineer

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Hon Mechatronics I
- Hon Mechatronics II
- Hon Industrial Robotics Technology

Preferred Aptitudes

- Strong mathematics ability

Medical Administration, Billing & Coding

One year

Occupation Opportunities

- Medical Information Technologist
- Administrative Assistant
- Medical Transcriptionist
- Medical Biller

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Medical Systems Administration
- Medical Coding & Billing I
- Medical Coding & Billing II

Preferred Aptitudes

- Proficient with typing, Microsoft Word, Excel, and PowerPoint

Medical Assistant

Two year

Occupation Opportunities

- Medical Assistant
- Medical Technician
- Admitting Clerk

Certification Opportunities

- CPR and First Aide
- OSHA & HIPAA Certification
- Nationally Registered Certified Medical Assistant (NAHP)

Credits for this Program

- Year 1 Medical Assistant I
- Medical Terminology OR Hon or C level Econ/Pers Finance
- Year 2 Medical Assistant II
- Intro to Health & Medical Sciences

Preferred Aptitudes

- Proficient in Algebra
- Enjoy helping others

Nail Technician

One year

Occupation Opportunities

- Nail Technician

Certification Opportunities

- Workplace Readiness Skills
- VA State Board Licensed Nail Technician

Credits for this Program

- Hon Nail Technician I
- Hon Nail Technician II
- Hon Entrepreneurship OR
- Hon or C level Economics/Persona I Finance

Preferred Aptitudes

- Able to complete detailed and artistic work accurately and consistently

Nurse Aide

One year

Occupation Opportunities

- Certified Nurse Aide
- Home Health Aide
- Registered Nurse

Certification Opportunities

- Certified Nurse Aide exam
- Workplace Readiness Skills

Credits for this Program

- Hon Nurse Aide I
- Hon Nurse Aide I
- Hon Medical Terminology

Preferred Aptitudes

- Strong mathematics ability
- Ability to work with the elderly in an extended care environment

Pharmacy Technician

One year

Occupation Opportunities

- Pharmacy Technician
- Medical Information Technologist
- Clinical Laboratory Technologist

Certification Opportunities

- Pharmacy Technician Certification
- Workplace Readiness Skills

Credits for this Program

- Pharmacy Technician
- Pharmacy Technician II

Preferred Aptitudes

- Proficient in mathematics and sciences
- Biology recommended
- Seniors only

Physical & Occupational Therapy

Two year

Occupation Opportunities

- Physical Therapist
- Speech-Language Pathologist
- Athletic Trainer
- Personal Trainer

Certification Opportunities

- Workplace Readiness Skills
- **Certified Physical Therapy Aide**

Credits for this Program

- Year 1 DE or C Level Physical/ Occupational Therapy I
- Year 2 DE or C Level Physical/ Occupational Therapy II

Preferred Aptitudes

- Strong mathematics and science ability
- Ability to stand for long periods of time
- Ability to occasionally lift up to 50 pounds

Precision Machining Technology

Two year

Occupation Opportunities

- Precision Machinist
- Manufacturing Engineer
- **Tool and Die Machinist**

Certification Opportunities

- National Institute for Metalworking Skills (NIMS)
- **Precision Machining Career Studies Certificate**

Credits for this Program

- Year 1 PMT I
- Year 2 PMT II

Preferred Aptitudes

- Analytical Skills Manual Dexterity
- Computer Application Skills
- Physical Stamina Mechanical Skills

Radiologic & Sonographic Technology

One year

Occupation Opportunities

- Radiologic Technologist
- Radiologist Meeting & Convention Planner

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Hon Radiologic Technology I
- Hon Radiologic Technology II
- Hon Medical Terminology

Preferred Aptitudes

- Proficient in mathematics and sciences
- Biology recommended
- Recommended for seniors

Television & Media Production

Two year

Occupation Opportunities

- Audio & Video Technicians
- Producers & Directors
- Writers

Certification Opportunities

- Workplace Readiness

Credits for this Program

- Year 1
 - Television and Media Production I
 - Television and Media Production II
- Year 2
 - Television and Media Production III
 - Communication Systems

Veterinary Science

One year

Occupation Opportunities

- Veterinarian
- Veterinary Technician
- Animal Scientist

Certification Opportunities

- Workplace Readiness Skills

Credits for this Program

- Beef Quality Assurance Exam (CH)
- Hon or DE Veterinary Sci I
- Hon or DE Veterinary Sci II
- Hon or DE Small Animal Care I

Preferred Aptitudes

- Strong in Math and Sciences
- Able to stand for long periods of time
- Ability to work with animals

Virginia Teachers for Tomorrow

One year

Occupation Opportunities

- Secondary School Teacher
- Instructional Assistant
- Preschool Teacher
- Elementary School Teacher
- Child Care Worker

Certification Opportunities

- ParaPro
- Praxis—Core Academic Skills for Educators
- Workplace Readiness Skills

Credits for this Program

- Hon Teachers for Tomorrow I
- Hon Teachers for Tomorrow II
- Hon Leadership OR Hon or C level Economics/Pers Finance

Preferred Aptitudes

- Enjoy working with younger students