



**EARLY TECHNICAL COLLEGE**  
*at Tennessee College of Applied Technology*



# ABOUT EARLY TECHNICAL COLLEGE

at Tennessee College of Applied Technology

Early Technical College at TCAT is a hybrid CMCSS high school that specializes in the technical training associated with high skill, high wage, and in-demand jobs. It provides a unique, hands-on learning experience that allows students a no-cost opportunity to work towards specialized industry certificates while also earning the necessary high school credits for graduation. Rigorous academic coursework is completed through an online platform led by Tennessee-certified instructors. Students participate in labs facilitated by TCAT instructors and internships aligned to classroom experiences in order to demonstrate competencies and earn industry recognized certificates in their chosen programs of study. Early Technical College is open to 11th and 12th grade students from high schools across CMCSS. Candidates must meet admission requirements to qualify.

## ADMISSION REQUIREMENTS

- CMCSS student entering 11th or 12th grade
- 2.0 GPA or higher
- Maturity for a college environment
- Good attendance and behavior
- On track to graduate

## NON-TRADITIONAL SCHEDULE

- Monday-Friday 10:30 AM – 5:30 PM
- Optional morning hours for work-based learning experiences
- Optional summer school hours between junior and senior year to earn additional TCAT hours
- Transportation available as needed

## WORK-BASED LEARNING OPPORTUNITIES

### ***JOB SHADOWING***

- Open to first-year students
- One day per week
- Must maintain ETC and TCAT grade, behavior, attendance requirements
- Begins second semester

### ***INTERNSHIPS***

- Open to second-year students
- Three days per week (T, W, Th)
- Must maintain ETC and TCAT grade, behavior, and attendance requirements
- Begins 2nd nine weeks of the school year

**Early Technical College has five pathways for students to consider:**

## INDUSTRIAL ELECTRICAL MAINTENANCE/MECHATRONICS

The Industrial Electrical Maintenance/Mechatronics (IEMM) pathway includes classroom and hands-on experiences in electronics, electrical, pneumatics, hydraulics, motor controls, programmable controllers, robotics, machine shop, and related math. Students completing this program are prepared to perform in a variety of entry level positions in typical industrial environments. Job duties could include the repair, installation, adjustment or maintenance of industrial production and processing machinery or refinery and pipeline distribution systems.

High school students who enter IEMM as juniors will complete at least 2 trimesters of the 5 needed to earn a TCAT diploma. Additional hours can be awarded to students who choose to attend classes during the summer between their junior and senior year of high school.

### YEAR ONE

*Electrician Repair Certificate (432h)*

- Blueprint Reading for IEM
- Course Orientation & Safety
- Developing Troubleshooting Skills
- Geometric Dimensioning & Tolerancing
- Industrial Safety & Health
- Intro to Basic Electronics
- Job Preparation
- OSHA-10
- Soldering & Circuit Repair
- Technology Foundations
- Worker Characteristics

### YEAR TWO

*Maintenance Apprentice Certificate (864h)*

- Fluid Power
- Heating & Air Conditioning
- Mechanical Maintenance
- Welding Fundamentals
- Worker Characteristics



# PHARMACY TECHNOLOGY

The Pharmacy Technology pathway provides both the technical instruction and skill development needed for students to become gainfully employed as pharmacy technicians in retail pharmacies, long-term care facilities, hospitals, or other healthcare settings. Pharmacy technicians prepare medications under the direction of a pharmacist and may measure, mix, count, label, and record amounts of medication dosages according to prescription orders.

High school students who enter Pharmacy Technology as juniors will complete at least 2 trimesters of the 3 needed to earn a TCAT diploma. Additional hours can be awarded to students who choose to attend classes during the summer between their junior and senior year of high school, which may result in the awarding of both a high school and TCAT diploma simultaneously.

## TCAT COURSEWORK

- Anatomy & Physiology
- Job Preparation
- Key Boarding
- Law & Ethics
- Medical Terminology
- Pharmacology
- Pharmacy Math
- Third-Party Reimbursement
- Top Drugs



# PRE-PRACTICAL NURSING



## TCAT COURSEWORK

Anatomy & Physiology  
Basic Nursing Skills  
Body Structure and Function  
Geriatrics  
Nutrition  
Obstetrics  
Pharmacology  
Psychology

The Pre-Practical Nursing (Pre-PN) pathway provides students the opportunity to complete preparatory coursework for the Licensed Practical Nursing program taught and facilitated by TCAT Nursing faculty. Licensed practical nurses care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions.

Upon high school graduation, successful Pre-PN students can transition into the adult Practical Nursing Program having completed 1 trimester of the 3 needed to earn a TCAT diploma.

This pathway is open to high school seniors only.



## HEATING, VENTILATION, AIR CONDITIONING/REFRIGERATION

The Heating, Ventilation, Air Conditioning/Refrigeration (HVAC/R) pathway introduces students to the theory, application, and service of air conditioning and refrigeration equipment. Instruction includes: print reading, basic electronics, pneumatics, math, programmable controllers, refrigerant containment certification (EPA certification), and heat pump technology.

Upon completion of this pathway, students will be prepared to enter jobs as service technicians in a variety of domestic, industrial, and commercial settings. Service technicians typically install or repair heating, central air conditioning, HVAC, or refrigeration systems.

High school students who enter HVAC/R as juniors will complete at least 2 trimesters of the 4 needed to earn a TCAT diploma. Additional hours can be awarded to students who choose to attend classes during the summer between their junior and senior year of high school.

### YEAR ONE

*HVAC Mechanic Assistant Certificate (432h)*

- Electricity & Controls I
- Employment Readiness Exam
- Green Awareness
- Insulation
- OSHA - 10
- Refrigeration Foundations
- Shop Safety
- Technology Foundations
- Tools, Equipment, & Shop Practices
- Worker Characteristics

### YEAR TWO

*Domestic Unit Repair Certificate (864h)*

- Basic Automatic Controls
- Domestic Appliances
- Employment Readiness Exam
- EPA
- EPA Section 608 Certificate
- Intro to System Service
- Motors
- Worker Characteristics

# DIESEL POWERED EQUIPMENT TECHNOLOGY

The Diesel Powered Equipment Technology pathway provides practical experience in the repair and maintenance of diesel powered equipment. Students receive instruction in troubleshooting, engine analysis, disassembling engines, replacing defective parts, reassembling, etc.

Upon completion of this pathway, students will be prepared to enter into employment as technicians in truck, construction, agricultural equipment, and other related fields. Typical job duties in this field can include the diagnosing, adjustment, repair and/or overhaul of mobile mechanical, hydraulic, and pneumatic equipment such as cranes, bulldozers, graders, and conveyors used in construction, logging, and mining.

High school students who enter Diesel Powered Equipment Technology as juniors will complete at least 2 trimesters of the 5 needed to earn a TCAT diploma. Additional hours can be awarded to students who choose to attend classes during the summer between their junior and senior year of high school.

## YEAR ONE

*Preventative Maintenance Service Technician Certificate (432h)*

Basic Diesel Theory  
General Shop Skills  
Orientation  
Preventative Maintenance  
Safety  
Technology Foundations  
Worker Characteristics

## YEAR TWO

*Diesel Engine Assembler Certificate (864h)*

Diesel Engine Mechanical  
Worker Characteristics





## OUR MISSION

The mission of the Early Technical College is to equip students with the academic and technical skills necessary for a successful transition into the global workforce.

## OUR VISION

The vision of Early Technical College is to empower all Early Technical College students to confidently and successfully enter into post-secondary and career opportunities and become positive, contributing members of society.



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*Learn how TCAT students succeed through internships with local employers.*

For more information or to apply, visit [etc.cmcss.net](http://etc.cmcss.net) or call 931.572.1695.



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