



## Heating, Ventilation, Air Conditioning, & Refrigeration Technology

The HVAC & R program is an individual program that prepares students to work in a variety of jobs in the field of air conditioning and refrigeration. Students are prepared to troubleshoot, repair, and maintain residential and commercial refrigeration; air conditioning; heat pumps; humidifiers; and electrical and gas heating. Students also learn the fundamentals of electricity, electric motors, and controls. Graduates of the program will be able to install and braze refrigeration tubing, diagnose electrical problems; install duct systems; repair light commercial equipment; recover air conditioning and refrigeration refrigerants; locate and repair leaks.

Program/Location	Length	Days	Time
Day Program/ Knoxville Campus	16 Months	Monday-Friday	8:00am—2:30 pm
Night Program/Knoxville Campus	16 Months	Monday-Friday	3:30 pm—10:00 pm
Day Program/Strawberry Plains	16 Months	Monday-Friday	8:00am—2:30 pm

### COURSE OUTLINE

#### First Trimester

Technology Foundations  
Orientation & Safety  
OSHA 10 Training  
Refrigeration Fundamentals  
Tools & Equipment  
Installation  
Intro to System Service  
Refrigerant Handling Certification

#### Second Trimester

Electricity & Controls  
Motors  
Basic Automatic Controls  
Electric Motors  
Domestic Appliances

#### Third Trimester

Electricity & Controls  
Commercial Refrigeration  
Commercial Refrigeration Loads & Equipment Sizing

#### Fourth Trimester

Air Conditioning (Heating & Humidifying)  
Air Conditioning (Cooling)  
All Weather Systems  
Carbon Monoxide

### Diplomas & Required Clock Hours

HVAC/R Technician—1728

Refrigeration Technician—1,296

### Certificates & Required Clock Hours

Heating & Air-Conditioning Mechanic Helper—432

Domestic Unit Repairer—864

### HOW TO APPLY

*All Documents Must be Presented Together to Apply*

- 1. FAFSA—Provide Proof of Completed FAFSA School Code = 004025 at <https://fafsa.ed.gov/>**
- 2. Immunizations—Provide Proof of Required Immunizations (Form is Attached)**
- 3. Complete TCAT Application for Enrollment (Form is Attached)**





## Heating, Ventilation, Air Conditioning, & Refrigeration Technology

### Book, Tool, and Supply List

1st Trimester			
Tuition	Cost		Total
Tuition*	\$1,139.00		
Technology Access Fee*	\$ 67.00		
Student Activity Fee*	\$ 10.00		
<b>TOTAL</b>			<b>\$1,216.00</b>

Book	ISBN	Cost	Required	
<b>Bundle: Refrigeration &amp; Air Conditioning Technology, 8th</b>	9781305720817	\$ 272.00		
<i>Refrigeration &amp; Air Conditioning Technology, 7th (part of bundle above)</i>	9781111644475		x	
<i>Lab Manual for Refrig..., 7th with access code (part of bundle above)</i>	9781111644581		x	
<i>Lab Manual for Refrigeration &amp; Air Conditioning (part of bundle above)</i>	9781111644475		x	
<i>Internet Companion for 2 yrs (part of the bundle)</i>	no isbn		x	
EPA Cert Prep Manual for Air Conditioning & Refrigeration	9781930044005	\$ 18.00	x	
Electrical Theory & Application for HVACR	9781930044326	\$ 40.00	x	
<b>TOTAL</b>				<b>\$330.00</b>

Supplies	Needed By	Cost	Required	
Dark Blue Denim Jeans	First day of class	\$ 35.00	x	
2 Light Blue Short Sleeve Work Shirts	First day of class	\$ 44.00	x	
1 Light Blue Long Sleeve Work Shirt	First day of class	\$ 25.00	x	
1 Dark Blue Service Jacket	First day of class	\$ 40.00	x	
Black Belt	First day of class	\$ 20.00	x	
Steel Toe Work Boots	First day of class	\$ 140.00	x	
1 Pair Leather Work Gloves	First day of class	\$ 20.00	x	
Safety Glasses	First day of class	\$ 10.00	x	
USB Flash Drive 4 GB	First day of class	\$ 12.00	x	
<b>TOTAL</b>				<b>\$346.00</b>

Tools	Needed By	Cost	Required	
2-1" Digital Type Thermometer Pocket	First day of class		x	
2 Adjustable Wrenches (1-6" & 1-8")	First day of class		x	
2 Long Hex Key Sets 6" & 8" Length	First day of class		x	
1 Refrigeration Ratchet Wrench	First day of class		x	
1 Refrigeration Ratchet Hex Key Adapter	First day of class		x	
Refrigerant Hose 1/4"	First day of class		x	
3 Phillips Type Screwdriver #3, #4, #6	First day of class		x	
3 Blade Type Screwdriver #4, #6, #8	First day of class		x	
1 Set of 3 Low Loss Ball Valve Fitting	First day of class		x	
1 Set of Digital or Analog Manifold Gauges for Both R-22 & R410A	First day of class		x	
Combination Wrench Set 1/4" & 7/8"	First day of class		x	
Combination Wrench Set Metric #5 - #15	First day of class		x	
Flaring Block	First day of class		x	
Clamp-on Amp Meter w Voltage, Resistance Capacitance & Temp	First day of class		x	
Tubing Cutter for Copper Tube 1/8" x 1"	First day of class		x	
1/4 Drive Socket Set 1/8"-1/2" Combination Metric & Standard	First day of class		x	
3/8 Drive Socket Set 3/8"-1" Combination Metric & Standard	First day of class		x	
Swaging Tool Set 1/4", 3/8", 1/2", 5/8"	First day of class		x	
Tool Bag	First day of class		x	
10" Channellock Pliers	First day of class		x	
Wire Crimp Pliers	First day of class		x	

All Costs are Estimated and Subject to Change Without Notice Revised: 4/26/2017

\*Denotes costs that can be covered by TN Promise and TN Reconnect

Diagonal Cutting Pliers	First day of class	x	
SAE Nut Driver Set	First day of class	x	
6" Straight Pliers	First day of class	x	
16' Steel Tape Measure	First day of class	x	
12 Ounce Ball Peen Hammer	First day of class	x	
Small Flashlight	First day of class	x	
Scrader Core Removal Tool	First day of class	x	
Lineman Electrical Pliers	First day of class	x	
Needle Nose Pliers 6" Length	First day of class	x	
Wire Stripper Pliers with Cutter	First day of class	x	
Inspection Mirror	First day of class	x	
Small Tubing Benders for 1/4", 3/8", & 1/2"	First day of class	x	
Mega Ohmmeter	First day of class	x	
<b>TOTAL</b>			<b>\$1,745.00</b>

Miscellaneous Cost	Cost	Required	
OSHA 10 Training	\$ 25.00	x	
<b>TOTAL</b>			<b>\$25.00</b>

2nd Trimester			
Tuition	Cost		Total
Tuition*	\$1,139.00		
Technology Access Fee*	\$ 67.00		
Student Activity Fee*	\$ 10.00		
<b>TOTAL</b>			<b>\$1,216.00</b>

3rd Trimester			
Tuition	Cost		Total
Tuition*	\$1,139.00		
Technology Access Fee*	\$ 67.00		
Student Activity Fee*	\$ 10.00		
<b>TOTAL</b>			<b>\$1,216.00</b>

4th Trimester			
Tuition	Cost		Total
Tuition*	\$1,139.00		
Technology Access Fee*	\$ 67.00		
Student Activity Fee*	\$ 10.00		
<b>TOTAL</b>			<b>\$1,216.00</b>

Miscellaneous Cost	Cost	Required	
Graduation Supplies	\$ 40.00	x	
<b>TOTAL</b>			<b>\$ 40.00</b>
<b>TOTAL PROGRAM COST</b>			<b>\$7,350.00</b>

All Costs are Estimated and Subject to Change Without Notice Revised: 4/26/2017

\*Denotes costs that can be covered by TN Promise and TN Reconnect

# TCAT - Knoxville Certification of Immunization Measles, Mumps, and Rubella (MMR)

Student's name: \_\_\_\_\_ Program of Enrollment: \_\_\_\_\_

## **PART I (TO BE COMPLETED BY STUDENT)**

Proof of MMR immunization is not required for the following reason:

- I graduated from a Tennessee public or private high school in 1999 or after. (transcript attached)
- I attended a Tennessee public or private high school in 2001 or after. (transcript attached)
- I was born prior to January 1, 1957. (copy of photo ID or birth certificate attached)
- I am active duty or former military personnel. (copy of DD214 or active military ID attached)

*IF THE ABOVE IS CHECKED, PLEASE SIGN BELOW.*

## **PART II (TO BE COMPLETED BY STUDENT)**

Proof of MMR immunization is not required for the following reason:

- I refuse immunization because of religious doctrine. (Reason affirmed under the penalties of perjury. Please attach statement.)

*IF THE ABOVE IS CHECKED, PLEASE SIGN BELOW.*

## **PART III—MMR (TO BE COMPLETED BY PHYSICIAN)**

Please circle the number that applies to this patient:

1. Patient has received two doses of measles vaccination since the age of 12 months:

Month/year \_\_\_\_\_ Month/year \_\_\_\_\_

2. Vaccination is medically contraindicated because of pregnancy, allergy to vaccine, etc. (Please list reasons.)

3. Patient had disease, as confirmed by medical record:

Month/year \_\_\_\_\_

4. Patient is immune to disease, as confirmed by laboratory.

Comment \_\_\_\_\_

**ATTEST**

**(Must be signed by an M.D. or D.O.)**

Name of physician (Please print) \_\_\_\_\_

Office telephone \_\_\_\_\_

Physician's signature \_\_\_\_\_ Date \_\_\_\_\_

Student's signature \_\_\_\_\_ Date \_\_\_\_\_

# TCAT - Knoxville Certification of Immunization Varicella (Chicken Pox)

Student's name: \_\_\_\_\_ Program of Enrollment: \_\_\_\_\_

## PART I (TO BE COMPLETED BY STUDENT)

Proof of varicella (chicken pox) immunization is not required for the following reason:

- I attended a Tennessee public high school between 1999 and May 2016. **(Must provide proof of second varicella vaccine dose from your physician office.)** (transcript attached)
- I was born prior to January 1, 1980. (copy of photo ID or birth certificate attached)
- I am active duty or former military personnel. (copy of DD214 attached)

*IF THE ABOVE IS CHECKED, PLEASE SIGN BELOW.*

## PART II (TO BE COMPLETED BY STUDENT)

Proof of varicella (chicken pox) immunization is not required for the following reason:

- I refuse immunization because of religious doctrine. (Reason affirmed under the penalties of perjury. Please attach statement.)

*IF THE ABOVE IS CHECKED, PLEASE SIGN BELOW.*

## PART III—VARICELLA (TO BE COMPLETED BY PHYSICIAN)

Please circle the number that applies to this patient:

1. Patient has received two doses of varicella (chicken pox) vaccination since the age of 12 months:  
Month/year \_\_\_\_\_ Month/year \_\_\_\_\_
2. Vaccination is medically contraindicated because of pregnancy, allergy to vaccine, etc. (Please list reasons.)  
\_\_\_\_\_
3. Patient had disease, as confirmed by medical record:  
Month/year \_\_\_\_\_
4. Patient is immune to disease, as confirmed by laboratory.  
Comment \_\_\_\_\_

**ATTEST**

**(Must be signed by an M.D. or D.O.)**

Name of physician (Please print) \_\_\_\_\_

Office telephone \_\_\_\_\_

Physician's signature \_\_\_\_\_ Date \_\_\_\_\_

Student's signature \_\_\_\_\_ Date \_\_\_\_\_



# TENNESSEE COLLEGES OF APPLIED TECHNOLOGY

## ENROLLMENT APPLICATION

*Applicants must complete every item on this form, sign and date and return it to the College.*

<b>Personal Information</b>	<b>Full Legal Name</b> <hr/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> <span>Last</span> <span>First</span> <span>Middle</span> </div> <hr/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> <span>Address</span> <span>City</span> </div> <hr/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> <span>County</span> <span>State</span> <span>Zip</span> <span>Email Address</span> </div> <hr/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> <span>- -</span> <span>/ /</span> <span></span> <span>Gender: <input type="checkbox"/> M <input type="checkbox"/> F</span> </div> <hr/> <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> <span>Social Security</span> <span>Date of Birth</span> <span>Age</span> </div> <hr/> <p>Marital Status: <input type="checkbox"/> Married <input type="checkbox"/> Single Preferred Phone Number: _____</p> <hr/> <p>Race: Do you consider yourself to be Hispanic/Latino/Spanish origin? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Select one or more of the following racial categories to best describe you:  <input type="checkbox"/> American Indian/Alaska Native <input type="checkbox"/> Native Hawaiian/Pacific Islander  <input type="checkbox"/> Asian <input type="checkbox"/> White  <input type="checkbox"/> Black or African American</p> <hr/> <p>Citizenship status: <input type="checkbox"/> US Citizen or US National <input type="checkbox"/> US Dual Citizen <input type="checkbox"/> US Permanent Resident or Refugee <input type="checkbox"/> Other</p> <hr/> <p>US Forces Status: <input type="checkbox"/> Currently Serving <input type="checkbox"/> Previously Serving <input type="checkbox"/> Current Dependent <input type="checkbox"/> N/A</p> <hr/> <p>ALL MALES 18 OR OLDER <b>MUST</b> be registered with Selective Service. Have you registered for Selective Service?  <input type="checkbox"/> Not required to registered <input type="checkbox"/> Registered <input type="checkbox"/> Required to register, but not registered</p>
<b>Prior Education/ Training</b>	<p>Education (<b>insert highest level of education completed</b>): _____</p> <hr/> <p>Name of last high school attended: _____</p> <hr/> <p>High school graduation date (mm/yyyy): _____ GED Diploma Date _____</p> <hr/> <p><i>Are you seeking credit for prior education, training or work experience?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<b>Program</b>	<p>Please review the campuses website and provide the program name choice for career training (Example: Administration Office Technology)</p> <hr/> <p>When will you be available to enroll in class? <input type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer</p> <hr/> <p>Do you plan to apply for financial aid? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Signature of Applicant: \_\_\_\_\_ Date of Application: \_\_\_\_\_

The Tennessee Colleges of Applied Technology (TCATs) do not discriminate on the basis of race, color, religion, creed, ethnic or national origin, sex, sexual orientation, gender identity/expression, disability, age, status as a covered veteran, genetic information and any other category protected by federal or state civil rights law with respect to all employment, programs and activities sponsored by the TCATs.



## Application for Enrollment

*The information is for Office use only:*

### ADMISSIONS REQUIREMENTS

- FAFSA                       I will not be filing financial aid. I will be paying for my education. Students Initials: \_\_\_\_\_
- Immunizations             Education Transcripts

### SPECIAL ADMISSIONS REQUIREMENTS

**Cosmetology:**

- Photo    Proof of Age    Copy of SS Card    RT/LT Handed    Manicuring Only

**Dental Assisting, Medical Assisting, and Surgical Technology**

HESI required scores: Math 70 and Reading 70

- HESI |ACT Scores: \_\_\_\_\_ Math \_\_\_\_\_ Reading \_\_\_\_\_ Critical Thinking (Date: \_\_\_\_\_)
- CPR Documentation (BLS for Healthcare Providers)

**Practical Nursing:**

HESI required scores: Math 70 and Reading 70

- Notarized Declaration of Citizenship    Copy of ID Used to Declare Citizenship
- CPR Documentation (BLS for Healthcare Providers)
- HESI |ACT Scores: \_\_\_\_\_ Math \_\_\_\_\_ Reading \_\_\_\_\_ Critical Thinking (Date: \_\_\_\_\_)

**Truck Driving:**

- MVR             DOT Physical             Valid Driver's License
- U.S. Citizenship / Residency

Staff Signature: \_\_\_\_\_

Date: \_\_\_\_\_