All Course completion with Certificate and Certification

Specialty Certification Courses

DCS Core 1 Exam Prep Course + Certification (Prerequisite)

DCS Commercial Refrigeration Prep Course + Certification

DCS Heat Pump Prep Course + Certification

DCS Light Commercial Air Condition Prep Course + Certification

DCS Residential Air Condition Prep Course + Certification

ALL COURSES COME WITH ALL THE ADVANTAGES AS OUR HVAC-R COMPLETE

PRACTICE SIMULATIONS INCLUDED

Wholesale Employee Training- Technical Core Assessment (WET)

Geared specifically for Wholesale Distribution Employers and their Employees

The WET TCA is a tool designed to determine your existing level of knowledge in Wholesale Distribution, Heating, Ventilation, Air Conditioning, Refrigeration, and Electrical. The WET - TCA is actually 6 separate assessments given in a sequence starting with Entry Level HVACR Distribution Employee. When completed, we can assess your results and design a personal education plan of courses to bring the Wholesale Distribution Employee's level of knowledge up to the industry standards for excellence.

DirectCool Solution LLC
Changing The Way We Service Our Industry

Courses (**foundation, Intermediate, Advanced, Energy Efficient**)

Our course learning modules cover specific HVACR concepts by incorporating a presentation that utilizes some or all of the following: text reading assignments, web site tours, applied exercises, online quizzes, industry terminology definitions, video clips, animations, images and downloadable/printable handouts. Each module concludes with a 20 question module specific exam and the course concludes with a 25 question comprehensive final exam.

Individual Modules

To help busy students save time and still acquire focused information, we've also made available all the individual learning modules that make up the courses shown in this catalog. Learning Modules are the building blocks of all our online courses, very much like chapters in a book, with about three hours of online instruction each. Now you have a choice to either study the whole book (online course) or just the chapter (individual module) you're most interested in. You can even mix and match modules to create a learning experience that meets your individual needs. All this adds up to using your valuable time more effectively.

. As soon as you submit the exam, you'll receive immediate feedback with your score . If you score 75% or higher, you can print your own official certificate of completion showing recognized continuing education hours.

DirectCool Solution LLC
Changing The Way We Service Our Industry

Courses

Customer Service (9 hours) *Foundation*
Written by Patricia Leiser and Phil Rains

Learn how to provide customers with first class customer service by becoming a valued employee, handling your paperwork and recordkeeping correctly, and communicating with your customers and co-workers in professional ways that develop return customers.
This course is recognized for 9 hours of continuing education (CEHs) applicable to NATE recertification, and BPI recognized for 4.5 continuing education units (CEUs). Three modules cover:

- ☐ Personal Work Habits
- ☐ Industry Paperwork and Recordkeeping
- ☐ Communications & Work Relationships

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Fundamentals (18 hour) *Foundation*
Written by Chris Compton

This online course provides an introduction to the HVACR basic fundamentals and terminology. The content of the course is dedicated to applied physics concepts that are util ized in HVACR systems.
Six modules cover:

- ☐ Measurements
- ☐ Heat energy
- ☐ Pressure
- ☐ Gas Works
- ☐ Air Works
- ☐ Introduction to the Industry

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Safety (18 hours) *Foundation*
Written by Chris Compton

This online course covers the basic safety considerations of the HVACR workplace. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards and includes RSES tutorials. This course for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Presentations and coursework are in six modules that cover:

- ☐ Labels, Materials Safety Data Sheets, and Safety Training
- ☐ Personal Protective Equipment (PPE)
- ☐ Personal Safety in Confined Space and on Ladders
- ☐ Fire Extinguishers and Compressed Gasses
- ☐ Electrical Lockout / Tagout
- ☐ Back Safety, Scaffolds/Lifts, and Fall Protection

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Basic Sheet Metal (18 hours/60 days) *Foundation*
Written by Mark Clemons

This course is designed to assist HVAC Technicians and others involved in the HVAC industry with a basic understanding of sheet metal. Sheet metal work is essential to HVAC work. An HVAC tech doing a furnace change out, for instance, will need to fit the new furnace to the plenum which may involve designing or building an adapter. The idea of taking a flat piece of metal and forming it into something useful, functional or decorative can be one of the most fascinating aspects of HVAC work. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards.

The main topics for the course are:

Solution LLC
DirectCool
Changing The Way We Service Our Industry

1. Types of Sheet Metal and Their Uses
2. Assembling, Connecting, and Fastening Sheet Metal Components
3. Sheet Metal Tools and Their Uses
4. Sealing, Insulating and Lining Sheet Metal Ductwork
5. Specifications, Symbols, and Codes
6. Introduction to Sheet Metal Duct Layout and Fabrication
7. Methods of Layout and Development

Copper Works (6 hours) *Foundation*

Written by Chris Compton

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Copper Works is different from all our other online courses because it was designed to provide specific guidance for students in a Copper Lab. It is rich with images and streaming videos that deliver the course content. There are no exams and therefore we cannot provide a certificate of completion for this course.

However, if you are a technician who wants to improve your copper Working ls without going to a classroom, this course is right for you. This course is BPI recognized for 3 continuing education units (CEUs). Copper Works course contains six learning modules covering:

- ☐ Copper Tubing/Pipe and Fittings
- ☐ Cutting, Flaring, Swaging & Bending Tubing
- ☐ Torch Safety and Operation
- ☐ Soft Solder
- ☐ Silphos Braze
- ☐ Silver Braze

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Principles of Building Science (28 hours) *Energy Efficient*
Written by Roger DesRosiers and Kent Compton

This is the first online course of its kind. It was developed and written in partnership with nationally recognized building science experts and is full of scientific facts, interactive exercises, pictures, videos, graphics, and text. Everything an individual in the building, remodeling, or trade industry needs to know to make buildings perform more efficiently. The PBS course has also been designed to help prepare individuals on the path to various NATE, HVAC Excellence, NARI, BPI, RESNET, and other industry credentials related to Energy Efficient building performance. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Students receive a downloadable reference book that is provided as a study guide for the course.
The Principles of Building Science course contains nine learning modules covering:

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

- ☐1. House as a System
- ☐2. Air Flow Basics
- ☐3. Heat Flow, Insulation & Windows
- ☐4. Framing & Air Sealing
- ☐5. Moisture Management
- ☐6. Conditioning Strategies
- ☐7. Ventilation
- ☐8. Combustion Safety
- ☐9. Indoor Air Quality Basics

DirectCool Solution LLC
Changing The Way We Service Our Industry

Basic Hand and Power Tools (6 hours) *Foundation*
Written by James Eller

This online course provides an introduction to the HVACR basic hand, power and specialty tools used daily by the working HVACR technician. The topics discussed include Installation, Service and Troubleshooting Tools. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. This course is recognized for 6 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 3 continuing education units (CEUs). Two modules cover:

- ☐ Installation Hand Tools - Sheet Metal and Piping
- ☐ Electronic and Power Tools

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Electrical DC Theory Plus (18 hours) *Foundation*
Written by Chris Compton

This online course is an introduction to basic electrical theory such as the electron, Ohms Law, circuit schematic symbols, circuit characteristics and measurements as applied to DC & AC circuits in the HVACR industry.
Instruction aligns with ANSI?ACCA Quality Installation & Maintenance Standards and includes RSES tutorials. This online course is NATE recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs).
Six modules cover:

Introduction to the Industry

- ☐ What is Energy
- ☐ Atomic Theory
- ☐ Basic Circuits
- ☐ Parallel Circuits
- ☐ Power

HVACR Electrical AC Theory Plus (18 hours) *Intermediate*
Written by Chris Compton

An online continuation of the Electrical 111 course, concepts presented and discussed are oriented towards alternating current production and application to devices utilized in HVACR systems. We will cover magnetism, alternating current, two types of loads, capacitors, and values of load devices and their calculations, and transformers. Instruction aligns with ANSI/ACCA Quality Installation & Main tenance Standards and includes RSES tutorials.

Six modules cover:

- ☐ Magnetism
- ☐ Alternating current
- ☐ Loads, Resistive and Inductive
- ☐ Capacitors
- ☐ Resistance
- ☐ Transformers

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Electrical Common Components (18 hours) *Advanced*
Written by Chris Compton

This online course covers common control components found in HVACR systems, a logical continuation of the 112 course. Presentations and examples are given for specific devices and their electrical sequence of operation in normal HVACR applications. The final modules discuss wiring and schematic reading.

Prerequisites:

You will want to have completed 111 HVACR Electrical DC Theory Plus, and 112 HVACR Electrical
AC Theory Plus, prior to enrollment into this advanced course.

The six modules cover:

☐Control Methods, Temperature & Pressure
☐Residential Heat / Cool Thermostats @ Low Voltage
☐Really Good Relay Stuff
☐Contractors go / Starters go with protection
☐Power wiring
☐Odds and ends around a schematic

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Electrical Motors (21 hours/60 days) *Advanced*
Written by Bob Recko and Bruce Aitken (module 7)

This online course is dedicated to common single-phase and small three-phase electric motors. Presentations focus on basic motor theory, common types of motors, starting components and protection devices. We will also develop diagnostic skills for motor troubleshooting and replacement. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Recommended Prerequisites: you will want to have completed 111 HVACR Electrical DC Theory Plus, and 112 HVACR Electrical AC Theory Plus, and 113 HVACR Electrical Common Components, or have a working knowledge of the content of those courses prior to enrollment into this advanced course. Please refer to each course description in the Catalog for the specific details. This course is recognized for 21 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 10.5 continuing education units (CEUs).

DirectCool Solution LLC
Changing The Way We Service Our Industry

Seven modules cover:

1. Basic Electric Motor Theory
2. Open and Hermetic Motors
3. Capacitor Motors
4. Three-phase Motors
5. The Application of Electric Motors
6. Diagnosing and Replacing Electric Motors
7. ECM Motors

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Systems Air Properties and Measurement (18 hours)

Intermediate

Written by Chris Compton

This online course is the introduction to HVAC comfort systems. In this course we will discuss heat energy, the conditions of human comfort, the psychrometric chart and plotting various air conditions upon it. We will complete the course by introducing the terms, concepts, measurements, and calculations of moving air.

Six modules cover:

- ☐Heat Energy and Comfort
- ☐Properties of Air
- ☐Psychrometrics
- ☐Total Heat In Air
- ☐Measuring a Heavy Invisible Moving Volume
- ☐Air Flow Measurement

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Systems II, Load Calculations (18 hours) *Advanced*
Written by Phil Rains

This online course introduces you to residential load calculations. This is a method to determine the heating and cooling BTU/H loads of structures prior to installing HVACR systems to meet those loads. The required text is the Air Conditioning Contractors of America (ACCA) Manual J, 8th Abridged Editio n (MJ8-AE). The manual provides thorough instructions for estimating heat loss and heat gain for residential structures and helps to simplify complicated procedures that are often used on a variety of home applications. This course will provide instruction for completing load calculations by hand, which is necessary prior to attempting any computerized load program.

Cont.

DirectCool Solution LLC
Changing The Way We Service Our Industry

We will focus on following the concepts of
MJ8-AE while simplifying the methodology emphasized in the manual
even further. Students will utilize a “simple” residential structure and follow
the steps to calculate both heat loss and
heat gain for its location and outdoor design temperatures.
ourse also covers residential equipment selection
focused on the heating and cooling equipment Btu/h loads of a structure. Rec
ommended Prerequisites: you will
want to have a strong working knowledge of basic HVACR fundamentals prior
to enrollment into this advanced
course.

This course is presented in the following six modules:

☐Fundamentals of Load Calculations
☐Heat Loss of a Structure
☐Heat Gain of a Structure
☐Example Heat Loss and Heat Gain Calculation
☐Fundamentals of Equipment Selection
☐Regional Load Calculation Exercises

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Air Distribution (18 hours) *Advanced*
Written by Phil Rains

Air Distribution begins with an in-depth discussion of the fundamentals of residential air flow, then turns the focus to residential duct design utilizing the Air Conditioning Contractors of America (ACCA) Residential Duct systems, Manual D and ACCA Manual T. System selection, system performance characteristics, duct materials, blower performance, air side devices and duct sizing procedures are covered in detail. Recommended

Prerequisites:

You will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE recertification, and BPI recognized for 9 continuing education units (CEUs).

DirectCool Solution LLC
Changing The Way We Service Our Industry

Module topics are:

1. Fundamentals of Air Flow
2. Air distribution Systems
3. Fundamentals of Air Conditioning Contractors of America (ACCA) Residential Duct Systems, Manual D
4. Application of Air Conditioning Contractors of America (ACCA) Residential Duct Systems, Manual D Duct
5. Sizing Procedures
6. Application of Air Conditioning Contractors of America (ACCA) Air Distribution Basics for Residential and
7. Small Commercial Buildings, Manual T
8. Selection and Sizing of Supply Air Outlets and Return Air Inlets using the ACCA Manual T and Air
9. Distribution Equipment Manufacturer Performance Data for an Example Residential Structure

HVACR Oil Heat I (18 hours) *Intermediate*
Written by Bob Recko

This online course is designed to introduce the concept of combustion in basic terms. The focus will be on the current direct-vent systems and the traditional high-pressure gun burner. It will prepare technicians to install, maintain, and repair residential and small commercial burner systems up to 400,000 BTUs/hour. We will explore all the mechanical, electrical, and accessory devices commonly found in the modern fuel oil heating systems. With this knowledge, we will build troubleshooting skills and identify applicable codes as they pertain to the installation and use of these systems.

Six modules cover:

☐Characteristics of Fuel Oil and Principles of Combustion
☐Types and Construction of Oil Burners
☐Oil Burner Anatomy (part one)
☐Oil Burner Anatomy (part two)
☐Fuel Oil Tanks and Piping
☐Complete Heating Systems

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Gas Heat I (18 hours) *Intermediate*
Written by Bob Recko

This course will provide knowledge and skills towards becoming a highly skilled technician who will install, maintain, and repair residential and small commercial Gas Heat Systems. We will explore all the mechanical, electrical, and accessory devices commonly found in the modern Gas Heating Systems. With this knowledge, we will build troubleshooting skills and identify applicable codes as they pertain to the installation and use of these systems.
Also extremely important is the focus on safety for the technician, the building, and its occupants.

Six modules cover:

☐Fuel Gas Composition
☐Pressure Regulators, Burners, and Heat Exchangers
☐Standing Pilot Systems
☐Electronic Ignition
☐High Efficiency Furnaces
☐Troubleshooting Gas Burner Systems

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Heat Pumps (21 hours/60 days) *Advanced*
Written by Phil Rains

This course is designed as an introduction to reverse-cycle heat pumps used in residential and light commercial applications. Content covers the components and operational differences of a heat pump vs. a straight air conditioning system; and components, troubleshooting, and solutions. Instruction aligns with ANSI/ACCA Quality installation & Maintenance Standards. Recommended Prerequisites: you will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course.

Modules cover:

What is a Heat Pump
- ☐ Heat Pump Installation and Quality Criteria
- ☐ The Heat Pump Cooling Mode
- ☐ The Heat Pump Heating Mode
- ☐ The Heat Pump Defrost Mode
- ☐ Heat Pump Components
- ☐ Heat Pump Troubleshooting

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Geothermal Heat Pump Systems (18 hours) *Advanced*
Written by Phil Rains

You will gain an introduction to geothermal heat pumps as one of the most efficient heating and cooling technologies available today. The course will focus on geothermal (water source) heat pumps utilized for residential and light commercial applications. A prerequisite to this course is a good understanding of the refrigeration cycle. Recommended Prerequisites: you will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Modules cover:

- ☐ Introduction to Geothermal Heat Pumps
- ☐ Geothermal Heat Pump Mechanics
- ☐ Ground-Water (Open-Loop) Systems
- ☐ Closed-Loop Systems
- ☐ Equipment Selection Criteria and Economics
- ☐ Installation Setup, Startup, and Troubleshooting

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Refrigeration I (18 hours) *Intermediate*
Written by Chris Compton

HVACR Refrigeration 141 is designed to provide a thorough examination of the refrigerant circuit as it is applied to th air conditioning and refrigeration purposes, and to provide a practical and systematic method to diagnose problems in the refrigerant circuit.
If you understand the parameters governing the operation of the refrigerant circuit, you will be able to diagnose any piece of equipment.
Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards and includes RSES tutorials.
This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-ertification, and BPI recognized for 9 continuing education units (CEUs).
Modules cover:

- ☐ Basic Refrigeration Cycle Physics
- ☐ Condensation and Condensers
- ☐ Expansion and Metering Devices
- ☐ Evaporation and Evaporators
- ☐ Compression and Compressors
- ☐ Measure the Normal Cycle

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Refrigeration II (18 hours) *Advanced*
Written by Chris Compton

This course is a continuation and elaboration of HVACR Refrigeration 1. Presentations will describe the application of common accessories found in a system, piping arrangements, sizing considerations and system operation. Instruction aligns with ANSIACCA Quality Installation & Maintenance Standards and includes RSES tutorials. Recommended Prerequisites: you will want to have completed 141 HVACR Refrigeration I, or have a working knowledge of the content of that course prior to enrollment into this advanced course. Please refer to each course description in the Catalog for the specific details. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Modules cover:

Refrigerants

- ☐ Compressor accessories and applications
- ☐ Low side accessories and applications
- ☐ High side accessories and applications
- ☐ Piping system sizing and applications
- ☐ Capacity control methods

DirectCool Solution LLC
Changing The Way We Service Our Industry

Building Automation Systems, I (18 hours) *Intermediate*
Written by Bob Recko

A good understanding of common HVAC systems is a prerequisite for this course. Building controls are very different from the typical controls found in most residential and commercial systems and equipment. Technicians should have a sense of what a building complex consists of, what control systems consist of, what control requirements need to be met and what choices are available in building design to meet the needs of the building. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. The Honeywell Engineering Manual is included in this course as a downloadable file. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs).
Module topics are:

- ☐ Building and HVAC Systems
- ☐ Air Circulation and Air Quality
- ☐ Control System Characteristics
- ☐ Process Characteristics and Control Systems
- ☐ Control System Components
- ☐ Control System Categories

DirectCool Solution LLC
Changing The Way We Service Our Industry

Building Automation Systems II (18 hours) *Advanced*
Written by Bob Recko

This course is an introduction to the primary concepts that lead to the do minant building controls systems, DDC and all its variants including Energy Management. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Recommended Prerequisites: you will want to have completed 151 Building Automation Systems I, or have a strong working knowledge of the content of that course prior to enrollment into this advanced course.
Please refer to each course description in the Catalog for the specific detai ls. This course is recognized
for 18hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Module topics are:

- ☐ Psychrometrics
- ☐ Pneumatic Control Basics
- ☐ Pneumatic Controls
- ☐ Electric Controls
- ☐ Electronic Controls Fundamentals
- ☐ Microprocessor Based/DDC

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Boilers I (18 hours) *Intermediate*
Written by Ken Donovan

This course is designed to introduce the concepts and terminology of heating and power boilers. The main focus of the course will be on commercial and industrial boilers. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. This course is recognized for 18 hours continuing education (CEHs) which are applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Modules cover:

- ☐ Boiler Fundamentals
- ☐ Classifying Boilers
- ☐ Combustion
- ☐ The Heat Exchanger
- ☐ Controlling energy Sources
- ☐ Boiler Accidents/Hazards

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Boilers Low Pressure License Prep (30 hours) *Intermediate*
Written by Ken Donovan and Keith Conrod

This online course is designed to introduce the concepts and terminology of heating and power boilers. The main focus of the course will be on commercial and industrial boilers. The content covers the required knowled ge For proper and safe low-pressure boiler system operations. term. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards.
This course is Recognized or 28 hours of continuing education (CEHs) which are applicable to NATE re-certification,
and BPI recognized for 15 continuing education units (CEUs).
The content is covered the 9 modules outlined below:

- ☐ Introduction to the industry
- ☐ Classifying Boilers
- ☐ Combustion
- ☐ The Heat Exchanger
- ☐ Controlling Energy Sources
- ☐ Boiler Accidents / Hazards
- ☐ Pumps
- ☐ Heat Transfer Units
- ☐ System Accessories

DirectCool Solution LLC
Changing The Way We Service Our Industry

Economizer Certificate Course (21 hours (Master) *Advanced* troubleshoot and ensure the correct operation of these systems. This certificate course is applicable to Title 24 in the State of California, and adheres to the ACCA/ASHRAE Standard 180 Quality Maintenance protocols.

Recommended Prerequisites: You will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course. This Economizer **Master** Certific ate course is NATE recognized for 21 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs).

The learning modules included in this course are:

1. Introduction to Economizers
2. Applied Economizers
3. Applied Psychrometrics
4. Economizer DDC Operations - Honeywell
5. Economizer Operations – Trane
6. Air Properties & Psychrometrics
7. Belimo – ZIP Economizer

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Hydronics I (18 hours) *Intermediate*
Written by Keith Conrod

This is the initial course on hydronic heating systems. This online course begins a series of courses that address hot water heating systems. Instruction aligns with ANSIACCA Quality Installation & Maintenance Standards. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs).
Module topics covered:

- ☐ System concept
- ☐ Materials and Tools
- ☐ Boilers
- ☐ Pumps
- ☐ Heat Transfer Units
- ☐ System Accessories

DirectCool Solution LLC
Changing The Way We Service Our Industry

Indoor Air Quality Basics (18 hours) *Foundation*
Written by John Kreiger and Chris Dorsi

You already know it is your job to provide services related to the comfort of air temperatures inside your clients' buildings. However, temperature management is not the only thing you need to know. This course will help you better understand the various elements of air quality, introduce the science of air quality, and give you some tips on how to identify and address the potential dangers of poor indoor air quality. The course does not address issues of allergies or chemically sensitive clients outside the basics of indoor air quality. You will learn indoor air properties, air flow, ventilation, moisture, and air filtration systems. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Modules address the following topics:

- ☐ IAQ Basics
- ☐ Properties of Air
- ☐ Air Flow Basics
- ☐ Ventilation
- ☐ Moisture Management

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Intro to Cooling System Troubleshooting (18 hours)

Advanced

Written by Phil Rains

This course is provided to instruct the entry level HVAC technician in the common service procedures performed on conventional residential light commercial cooling systems including electrical circuits, mechanical compression refrigeration cycle, and necessary components in a cooling system, and more. This course requires a good understanding of the refrigeration cycle before you begin. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards and includes RSES tutorials.

Recommended Prerequisites: you will want to have completed 141 HVACR Refrigeration I

This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 9 continuing education units (CEUs). Module topics are:

- ☐ System Service Overview
- ☐ Service Tools/Equipment, Safety, and Quality
- ☐ System Components
- ☐ System Air Flow
- ☐ System Electrical Troubleshooting Basics
- ☐ System Mechanical Troubleshooting Basics

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR R-410A Refrigerant Technology for HVACR Technicians (18 hours)

Advanced

Written by Phil Rains

This R410A Qualification course is designed to familiarize the technician with the differences between R-22 and R-410A. Background, regulations, impact on the industry, and application requirements will be presented. Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Recommended Prerequisites: you will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course. This course is recognized for 18 hours of continuing education (CEHs) which are applicable to NATE recertification, and BPI recognized for 9 continuing education units (CEUs).

This course has been approved by International Comfort Products, LLC. Six Modules cover:

- ☐ R - 410A Refrigerant Background
- ☐ R - 410A Refrigerant Regulatory Requirements
- ☐ R - 410A Refrigerant Basics
- ☐ R - 410A Refrigerant Safety, Handling, and Service Considerations
- ☐ R - 410A System Components, Retrofitting, and Charging
- ☐ R - 410A System Troubleshooting

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Advanced Troubleshooting (21 hours) *Advanced*
Written by Chris Hickman, James Eller, and Phil Rains

This comprehensive course will help technicians move through a procedure to follow safety guidelines, identify the source of problems in HVACR systems, use diagnostic tools, and to address the problem properly. Often technicians start their investigation with only the customer's call, "It died yesterday!" Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Recommended Prerequisites: you will want to have a strong working knowledge of basic HVACR fundamentals prior to enrollment into this advanced course. This course is recognized for 21 hours of continuing education (CEHs) applicable to NATE re-certification, and BPI recognized for 10.5 continuing education units (CEUs). The course is divided into 7 modules covering the topics listed below:

- ☐ Electrical Troubleshooting
- ☐ Advanced Controls Troubleshooting
- ☐ Troubleshooting instrumentation
- ☐ Troubleshooting the Air Side of Systems
- ☐ Troubleshooting Refrigeration
- ☐ Troubleshooting Combustion
- ☐ Troubleshooting Hydronics

DirectCool Solution LLC
Changing The Way We Service Our Industry

Hydrocarbon Refrigerants Training (3 instructional hours)

Intermediate

The US Clean Air Act and the Environmental Protection Agency is phasing o ut ozone depleting refrigerants like R-22. As a result, technicians will be handling other refrigerants like Hydrocarb ons. This course will introduce technicians to hydrocarbons as refrigerants, cover the associated regulations a nd standards, and get you familiar with their properties and how to handle them safely. In addition there is a summary of the refrigerant cycle as it relates to hydrocarbon refrigerants, system components, and the proper safe servicing procedures of hydrocarbon refrigerant systems. Course content was provided by RSES. This course is NATE recognized for 3 hours of continuing education (CEHs) and BPI recognized for 1.5 CEU's applicable to recertification. Must earn a grade of 75% or higher to obtain CEH recognition. Hydrocarbon Refrigerants Training Course contains learning modules covering:

1. Introduction to the use of Hydrocarbons as Refrigerants
2. HC Regulations and Standards
3. Refrigerant Properties and Safety
4. The Refrigerant Cycle
5. System Components
6. Servicing Procedures

DirectCool Solution LLC
Changing The Way We Service Our Industry

Performing the Comprehensive Building Assessment (40 hours)*Energy Efficient Intermediate*

Designed to introduce students to the comprehensive building assessment process, this intermediate course is geared toward conducting visual building inspections, performing diagnostic testing, and determining residential building improvement opportunities in the field; then documenting a home's performance, prioritizing improvements, and preparing a work scope that will guide the homeowners decision making process for making the improvements. Students will start out learning the systems, tools and techniques commonly encountered during visual observations including evaluation of envelope components, mechanical systems and base loads such as appliances and lighting. They will then step into diagnostic testing learning first how to work safely. Students will learn how to set up and use the blower door for building pressurization/depressurization testing; and how to utilize the data obtained in making decisions. Students will learn combustion safety testing (including worst case depressurization, draft and spillage testing), and how to test various appliances for CO including: furnaces, boilers water heaters and other combustion appliances.

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Students will also learn basic duct diagnostic testing. Finally, students will be taught how to use assessment information and diagnostic results to develop a work scope which can then be presented to a customer. Approximately 10 hours of animations are included in the instruction. This course will refer to the BPI Building Analyst as well as to various industry codes and standards. It helps prepare individuals for BPI Building Analyst Certification and NATE HVAC Efficiency Analyst Certification (Senior Level).
Instruction aligns with ANSI/ACCA Quality Installation & Maintenance Standards. Recommended
Prerequisites: you will want to have completed 107 Principles of Building Science, Principles of Energy Efficient Buildings, or a similar course; or have a solid working knowledge of building science concepts, house-as-a system concepts, and basic HVACR fundamentals prior to enrollment into this advanced course.
Please refer to each course description in the Catalog for the specific details. This course is recognized for 40 hours of continuing education (CEHs) and BPI recognized for 20 CEU's applicable to re-certification. An additional 10 BPI CEUs are available to successful Intercaz Simulation completers directly through Intercaz.

Cont.

Must earn a grade of 75% or higher to obtain CEH recognition.

Performing the Comprehensive Building Assessment course contains learning modules covering:

1. Observation Techniques and Data Collection
2. Exterior & Interior Assessment and Building System Analysis
3. Blower Door and Zonal Pressure Diagnostics, Ventilation Rates
4. Combustion Safety Testing and Analysis
5. Duct Diagnostics
6. Work Scope Development and Customer Relations
7. Intercaz Simulation Experience a comprehensive combustion appliance safety training simulation

DirectCool Solution LLC
Changing The Way We Service Our Industry

Contractor Business Courses

Employee Training Program: Contractors, if you're looking for the best strategy to train your technicians, we can help. Read about our Technical Core Assessment. Each technician receives a personal education plan to fill out his or her specific weak knowledge areas. They don't waste any time learning what they already know. It saves time and money. Also, if the contractor is paying for the student's enrollment fees, we send student progress reports to the employer so you can check on your technicians' progress.

DirectCool Solution LLC
Changing The Way We Service Our Industry

Operations Management (18 hours) *Advanced*

Written by Larrie Mendoza, Phil Rains, and Bill Parlapiano

As a contractor or operations manager, there are many challenging elements to overseeing your HVACR work flow. It's up to you to establish and follow-through on business practices that make your company profitable. This course will help by addressing the best practices in the primary areas of your company's operations that impact your profit margin. You will learn basic business practices and procedures to help man age the work flow and minimize delays,loss of time, and resources. This course is recognized for 18 hours of continuing education (CEHs) applicable to NATE re-certification. Module topics are:

1. Industry Paperwork and Recordkeeping
2. Personnel Management and Communications Skills
3. Systems Integration: Design
4. Systems Integration: Installation
5. Materials Management
6. Resource Scheduling and Cost Management Awareness

DirectCool Solution LLC
Changing The Way We Service Our Industry

Product and Service Pricing for a Profit (15 hours)*Foundation*
Written by Tom Grandy

This is the first in a new series of Online Courses for Contracting Businesses, developed in collaboration with nationally acclaimed Grandy and Associates. This 15 hour course covers everything a contractor needs to Calculate a realistic hourly rate for their installation and service jobs; budgeting and cash flow; equipment replacement Costs; field labor costs; material sales; customer response cards; discussion of flat rate pricing; overhead; company matching taxes; fixed and variable overhead; net profit; overhead absorption; break-even rate; markup vs. Profit; calculation of hourly rate; overhead cost per hour and an evaluation of the "what if" process. This course is specifically designed to help contractors consider all the costs of running a p rofitable business and setting their pricing at levels that keep their business going and growing.

Module topics are:

1. Budgeting and Cash Flow
2. Equipment and Replacement Costs
3. Field Labor Costs
4. Material Sales – Overhead Costs
5. Net Profit
6. Worksheet Handouts

DirectCool Solution LLC
Changing The Way We Service Our Industry

Fifteen Things All Successful Companies Have in Common (15 hours)

Foundation

Written by Tom Grandy

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

This is the second in a new series of Online Courses for Contracting Businesses, developed in collaboration with nationally acclaimed Grandy and Associates. This 15 hour course describes in detail what all successful companies have learned; "What it takes to survive and prosper". The five modules in this course cover the 15important topics that every business must know to make it in the Contracting Industry. This is valuable information that is a 'Must Have 'in today's marketplace. Each of the topics provides a fresh insight into how to run a very profitable business. We saved the best for last, which is the section on tax tips --t**his section alone will provide enough tax savings to pay for this program.** At the end of each section there is a list of additional resources that can help expand your knowledge of the topic that is being covered.

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Module topics are:

1. Realistic Labor Rates; Budgeting; Business Plan
2. Marketing Plan; Marketing Tools; Collections Policy
3. Networking; Planning for Growth; Maintenance Agreement Program
4. Company Newsletter; Flat Rate Pricing; Customer Response Cards
5. Customer Service Training; Bank Line of Credit; Tax Minimization Plan

Special Purpose Courses

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

National Environmental Balancing Bureau

Written by Bob Gleeson

NEBB-1 NEBB Report Preparation and Writing (3hours/30 days)
This course provides comprehensive instruction concerning the requirements and formats needed to write a NEBB
Certified Testing, Adjusting and Balancing (TAB) Report. NEBB Procedural St andards and the usage of NEBB
Certified TAB Report forms and formats are discussed in detail. Examples of Certified Report forms are provided
along with step by step instructions to teach the student the correct methods involved in the generation of a NEBB
Certified Report. Successful completion of this course helps to prepare the st udent for NEBB Certification.
Please note that the student will be provided with two (2) opportunities to take the Final Exam during their enrollment period.

DirectCool Solution LLC
Changing The Way We Service Our Industry

Special Purpose Courses

NEBB-2 NEBB Report Review and Error Finding (3hours)
It is the job of the TAB Certified Professional to control the quality of the TAB work and TAB reports. This course provides comprehensive instruction in the methods and procedures recommended by NEBB to insure an accurate and error free Testing, Adjusting and Balancing (TAB) Report. NEBB Procedural Standards and the usage of NEBB Certified TAB Report forms and formats are discussed in detail. Examples of Certified Report forms are provided along with step by step instructions to teach the student the correct methods involved in the review and error checking of a NEBB Certified Report. Successful completion of this course helps to prepare the student for NEBB Certification. Please note that the student will be provided with two (2) opportunities to take the Final Exam during their enrollment period.

Review Courses

A review is a rich online course you may move through at your own pace without an instructor. Each Review
Course allows 30 days enrollment to review the materials.
Assessments can be taken multiple times to gain
knowledge competencies and exam practice. However,
you do not receive a certificate of completion.

DirectCool Solution LLC
Changing The Way We Service Our Industry

HVACR Applied Math Review (15 course hours) *Foundation*

Written by Chris Compton

A course designed to refresh and exercise common math concepts as appl ied to the HVACR workplace. This course provides demonstrations and exercises of the four basic math functions; addition, subtraction, Multiplication and division. Each of the four functions is exercised using HVACR workplace applications. Each of the four math functions are applied to:

- ☐ Whole numbers
- ☐ Fractions
- ☐ Decimals

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

EPA Pre Review *Foundation*
By RSES

This course is a selection of four learning modules designed to provide all the necessary information for a technician to prepare for the EPA 608 Certification exam. Successful completion of all four modules will prepare technicians for the Universal level. It is rich with visuals, animations, and checkpoint tests to enforce your learning experience. Use the modules as an introduction, or a review just before you take the exam.

- ☐ Core
- ☐ Type I
- ☐ Type II
- ☐ Type III

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certification Exam Prep Reviews

Each review comes with random selection exams that include immediate fee dback. With these exams available on demand, you can continually test yourself and improve the areas that you need most. However, you do not Receive
a certificate of completion. Instruction aligns with ANSI/ACCA Quality Install ation & Maintenance Standards.
Online learning tools include:

* Downloadable study handouts
* User-friendly navigation
* Linked resource sites for additional study
* 30-day access
* Video clips on key points

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certification Exam Prep Reviews

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Core Certification Review

This online review is designed to prepare technicians for the NATE Core Service Certification exam. The review covers in detail the same main topics as the NATE Core Service:

*HVAC Fundamentals *HVAC Air Side Knowledge
*HVAC Electrical Knowledge

Air Conditioning Certification Review

This online review program is designed to prepare technicians for the NATE Air Conditioning Certification exam at the Service level.
The review is done in four very comprehensive sections covering:

*HVAC Electrical Knowledge *Refrigeration Cycle Knowledge
*Air Side Knowledge *Cooling Service Knowledge

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certification Exam Prep Reviews

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Air to Air Heat Pump Certification Review

This online review is designed to prepare technicians for the NATE Air to Air Heat Pump Service Certification exam at either the Installation or Service level. The review is done in four very comprehensive sections covering:

* HVAC Electrical Knowledge
* Refrigeration Cycle Knowledge
* Air Side Knowledge
* Heat Pump Specific Knowledge

Gas Heating (Air) Certification Review

This online review is designed to prepare technicians for the NATE Gas Heating (Air) Service Certification exam at either the Installation or Service level. The review is done in three very comprehensive sections covering:

* HVAC Electrical Knowledge
* Air Side Knowledge
* Gas Heat Specific Knowledge

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certification Exam Prep Reviews

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Hydronics Gas Certification Review

This online review is designed to prepare technicians for the NATE Hydronics Gas Service Certification exam at either the Installation or Service level.
The review is done in three very comprehensive sections covering:

* HVAC Electrical Knowledge *Hydronics Knowledge
* Gas Heat Specific Knowledge

Hydronics Oil Certification Review

This online review is designed to prepare technicians for the NATE Hydronics Oil Service Certification exam at either the Installation or Service level.
The review is done in three very comprehensive sections covering:

* HVAC Electrical Knowledge *Hydronics Knowledge
* Oil Heat Specific Knowledge

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certification Exam Prep Reviews

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Oil Heating (Air) Certification Review

This online review is designed to prepare technicians for the NATE Oil Heating (Air) Service Certification exam at either the Installation or Service level. The review is done in three very comprehensive sections covering:

* HVAC Electrical Knowledge
* Oil Heat Specific Knowledge
* Air Side Knowledge

DirectCool Solution LLC
Changing The Way We Service Our Industry

Exam Prep Study Guides, Slides, and Sample Exam Question

DirectCool Solution LLC
Changing The Way We Service Our Industry

To help experienced HVACR Technicians prepare for industry certification exams (especially NATE Core and Specialties), we have partnered with Jeff Taylor of TekAssist to bring you 30 days access to his library of extensive online downloadable study guides, instructional slide presentations, and online sample exam questions (with correct answer indicator) for almost any HVACR topic including:

- ☐ Core
- ☐ Air Conditioning
- ☐ Gas Heat
- ☐ Heat Pumps
- ☐ Air Distribution
- ☐ Commercial

Your enrollment in TekAssist includes access to everything in the entire library. It is a great way to prep for any industry certification exam on a budget.

Note: This 30 day online access is provided for industry certification exam preparation and knowledge refresh only.

There are no instructors or student support services included, no grades, and no continuing education credits. All content is copyrighted to TekAssist.

Certificate Programs

Programs are made up of a series of topic appropriate modules or courses to meet specific learning needs. Programs are described below. The modules or courses included in each program are described in more detail under the “Courses” section of this catalog.

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Certificate Programs

HVACR Apprentice **610 (or more) instructional hours**

This is the only ANSI Accredited apprenticeship training program in the country AND it's online convenient quality education. Courses align with the US Department of Labor Apprenticeship Guidelines and DCS Direct Course studies HVACRedu.net is a Registered Apprenticeship Training Provider. This online program is the related training educational component of registered apprenticeship programs.

[Note: Employment and on-the-job-training is not included.] Courses include RSES tutorials. Many employers find it a valuable way to provide on-the-job training to new employees whether or not it is part of a registered apprenticeship program. All courses are scheduled and guided by qualified Industry experts in a cohort setting. Courses are available on a revolving schedule so students may enter the program at the beginning of any course. We are happy to offer assistance registering your apprenticeship program with our online training in your state, please contact us.

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Certificate Programs

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Year 1 (150 hours)

Basic Safety (18 hours)
Basic Construction Math (12 hours)
Basic Hand and Power Tools (6 hours)
Intro to Applied Science (24 hours)
Energy Sources (12 hours)
Intro to Code (12 hours)
Customer Service (6 hours)
Fuel Piping (30 hours)
Venting (30 hours)

Year 2 (150 hours)

Intro to Blueprints (24 hours)
Appliance Installation (24 hours)
Heat Loads (24 hours)
Indoor Air Quality (18 hours)
Electrical I (24 hours)
Electrical II (36 hours)

DirectCool Solution LLC
Changing The Way We Service Our Industry

Certificate Programs

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Year 3 (156 hours)
Basic AC & Refrigeration (30 hours)
Systems Air Flow & Duct Sizing (30 hours)
Introduction to Hydronics (6 hours)
Introduction to Service (12 hours)
Basic Controls (36 hours)
Basic Sheet Metal (42 hours)

Year 4 (156 hours)
Testing & Air Balance (12 hours)
Control Strategies (6 hours)
Advanced Air Conditioning & Heat Pump (42 hours)
Advanced Service (24 hours)
Systems Integration (12 hours)
Code Review (48 hours)
Project Management (12 hours)

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Program Learning Objectives:

Year 1

1. The apprentice will demonstrate new knowledge in the subjects of Basic Safe ty, Basic Math, Hand & Power Tools,
Introduction to Applied Science, Energy Sources, Introduction to Code,
Customer Service, Fuel Piping and Venting; by
earning an overall average score of 75% or higher in the combined year's curriculum.
2. The apprentice will actively participate in the program's discussion forums, as confirmed by the forum logs and
discussion grades, by earning an overall average score of 75% or higher in the combined year's curriculum.

Year 2

1. The apprentice will demonstrate new knowledge in the subjects of Heat Load s, Indoor Air Quality, Electrical, Blueprints,
and Appliance Installation; by earning an overall average score of 75% or highe r in the combined year's curriculum.
2. The apprentice will actively participate in the programs discussion forums, as confirmed by the forum logs and
discussion grades, by earning an overall average score of 75% or higher in the combined year's curriculum.

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Year 3

1. The apprentice will demonstrate new knowledge in the subjects of: Basic Sheet Metal, Basic Air Conditioning and Refrigeration, Systems Air and Duct Sizing, Intro to Hydronics, Intro to Service, and Basic Controls; by earning an overall average score of 75% or higher in the combined year's curriculum.
2. The apprentice will actively participate in the programs discussion forums, as confirmed by the forum logs and discussion grades, by earning an overall average score of 75% or higher in the combined year's curriculum.

Year 4

1. The apprentice will demonstrate new knowledge in the subjects of: Advanced Service, Systems Integration, Code Review, Project Management, Testing & Air Balance, and Control Strategies; by earning an overall average score of 80% or higher in the combined year's curriculum.
2. The apprentice will actively participate in the programs discussion forums, as confirmed by the forum logs and discussion grades, by earning an overall average score of 80% or higher in the combined year's curriculum.

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

HVACR Core Program **320 (or more) instructional hours**

This program is a nationally recognized Certificate program, offered in par tnership with over 1,000 colleges and universities across the country. Enroll through a college near you and all your courses are online.

Click here to find a college near youhttp://www.gatlineducation.com/search.php?course_id=21

An additional benefit to this program is that our partner colleges can work with students who may qualify for financial and/or military educational benefits. This is a comprehensive HVACR training program encompassing heating, ventilation, air conditioning, and refrigeration. It is specifically structured to enrich the skills of installers and technicians who are:

Cont.

Solution LLC
DirectCool
Changing The Way We Service Our Industry

Just beginning in the HVACR industry

☐ Continuing education for upgrading knowledge and skills, or

☐ Preparing for certifications or licenses (NATE or ICE)

The content presented in each course focuses on learning objectives that have been identified by HVACR industry groups (ARI, NATE, RSES, ACCA, and PAHRA) as key knowledge for an HVACR technician.

The courses making up the HVAC Core Technician Program are:

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

1. 101 Fundamentals
2. 102 Safety
3. 111 Electrical DC
4. 112 Electrical AC
5. 113 Electrical Common Components
6. 114 Electrical Motors
7. 121 Systems Air Properties
8. 141 Refrigeration
9. 142 Refrigeration
10. 131 Oil Heat
11. 133 Gas Heat
12. 161 Boilers
13. 191 Hydronics
14. 135 Heat Pumps
15. 151 Building Automation Systems
16. 122 Systems Load Calculations

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

Your enrollment includes these textbooks that will be shipped to you within one week of enrollment:

☐ Refrigeration and Air Conditioning Technology, 7th Edition

☐ACCA Manual J AE Residential Load Calculations, 8th Edition (used in 122 Systems Load Calculations)

Additionally, this book is included as a downloadable file:

☐ NORA Oil Heat Manual (downloadable within the 131 Oil Heat course)

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

HVACR Tech Launch Program

270 (or more) online instructional hours

The HVACR Tech Launch Program is a comprehensive online HVACR education program encompassing heating, ventilation, air conditioning, and refrigeration. In addition to the rich selection of basics courses, each technician may choose as the final course an elective that fits his/her specific interests or regional system type. This flexibility allows the student to focus on knowledge used in his/her line of work or home geographic area. The program is specifically structured to provide a well-rounded introduction to the basic skills of installers and technicians who are:

DirectCool Solution LLC
Changing The Way We Service Our Industry

☐ Just beginning in the HVACR industry
☐ Continuing education for upgrading knowledge and skills, or
☐ Preparing for an initial EPA 608 Refrigerant Handling Exam
☐ Preparing for R-410A Refrigerant Handling Qualification
☐Preparing for certifications or outcome exams: HVAC Excellence Work Ready Exams, or NATE Service Core
☐Preparing for state license exams that are often coupled with two or more years work experience

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

This program includes everything you need: student orientation to online learning, Student Handbook, the required textbook (shipped upon enrollment), the online program courses (one at a time-listed below), a voucher foryou to take the NATE Service Core Certification exam, and a voucher for the EPA 608 Refrigeration Handling License Exam. We'll even help you arrange a place and time for your exams, near your geographic location. The required textbook you will receive: Delmar: Refrigeration and Air Conditioning Technology, 7th Edition(Hardcover), Whitman, Johnson, Tomczyck, ISBN 13: 9781111644475

DirectCool Solution LLC
Changing The Way We Service Our Industry

DCS
DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

The content presented in each course focuses on learning objectives that have been identified by HVACR industry groups (HVAC Excellence, AHRI, NATE, RSES, HARDI, PAHRA, and ACCA) as key knowledge for an HVACR technician. This program is offered completely online. Even though it is self-paced, you will receive a 60 day enrollment access to each online course. You will be registered for one course at a time. Upon successful completion of a course (a score of 75% or higher), you will be registered into the next one and receive a certificate of completion for that course via email.

DirectCool Solution LLC
Changing The Way We Service Our Industry

The courses making up the program are:

1. 101 Fundamentals ..... (18 hours)
2. 050 Applied Math Review ..... (15 hours)

(050 Math enrollment is concurrent with 101, 102, 111, 112, 113, and 114)

3. 102 Safety ..... (18 hours)
4. Basic Hand and Power Tools..... (6 hours)
5. 111 Electrical DC Theory Plus ..... (18 hours)

6. 112 Electrical AC Theory Plus ..... (18 hours)
7. 113 Electrical Common Components..... (18 hours)
8. 114 Electrical Motors..... (21 hours)
9. 121 Systems Properties & Measurement..... (18 hours)
10. 141 Refrigeration I..... (18 hours)
11. 241 Intro to Cooling System Troubleshooting ..... (18 hours)

12. 242 R-410A Refrigerant Technology.....
(18 hours)
13. 135 Heat Pumps.....
(21 hours)
14. EPA 608 Refrigerant Usage Review (as many or as few hours as you ne ed)
15. TekAssist Prep for NATE Service Core Exam
16. 133 Gas Heat I .....
(18 hours)
17. Elective (choose one from below): .....
(18 hours)

103 Basic Sheet Metal, 131 Oil Heat I, 137 Geothermal Heat Pump Systems, 142 Refrigeration II, 151 Building Automation Systems I, 161 Boilers I, 191 Hydronics I, 221 Indoor air Quality Basics

18. Customer Service .....
(9 hours)
19. Take the NATE Service Core and EPA Exams
TOTAL HOURS .....
..... 270 plus

For course descriptions, find the corresponding course number at the beginning of this catalog. Program completion is established after you successfully complete every course with a grade of 75% or higher. Program completion includes a voucher good for one EPA 608 Refrigerant Handling License Exam and a voucher for one NATE Service Core Exam. These vouchers will be emailed along with your Program Certificate of Completion.

HVACR **240 (or more) instructional hours**

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

The HVACR Technician Essentials Program is a comprehensive online HVACR education program encompassing heating, ventilation, air conditioning, and refrigeration. In addition to the rich selection of basics courses, each technician may choose their last course to be either 103 Basic Sheet Metal, or 191 Hydronics. This flexibility allows the student to focus on knowledge used in their line of work or home geographic area. It is specifically structured to provide a well rounded introduction of the basic skills of installers and technicians who are:

- ☐ Just beginning in the HVACR industry
- ☐ Continuing education for upgrading knowledge and skills, or
- ☐ Preparing for certifications or outcome exams: HVAC Excellence Work Ready Exams, or NATE Service Core
- ☐ Preparing for state license exams that are often coupled with two or more years work experience

DirectCool Solution LLC
Changing The Way We Service Our Industry

The content presented in each course focuses on learning objectives that hav e been identified by HVACR industry groups (HVAC Excellence, AHRI, NATE, RSES, HARDI, PAHRA, and ACCA) as key knowledge for an HVACR technician. This program is offered completely online. Even though it is self-paced, students receive a 60 day enrollment for each course. Students are registered for one course at a time. Upon successful completion of a course (a score of 75% or higher), students are registered into the next one and receive a certificate of completion.

After successful completion of all fourteen courses, students receive a Certificate of Completion for the HVACR Technician Essentials Program.

The courses making up Program are:

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

1. 101 Fundamentals
2. 102 Safety
3. 111 Electrical DC Theory Plus
4. 112 Electrical AC Theory Plus
5. 113 Electrical Common Components
6. 114 Electrical Motors
7. 121 Systems Properties & Measurement
8. 141 Refrigeration I
9. 241 Intro to Service
10. R-410A Refrigerant
11. 135 Heat Pumps
12. EPA 608 Refrigerant Usage Review
13. 133 Gas Heat I
14. Option: 103 Basic Sheet Metal OR 191 Hydronics

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

HVACR Service Program **160 (or more) instructional hours**

The HVAC Service Core program is a comprehensive online HVACR education program encompassing heating, ventilation, air conditioning, and refrigeration. It is specifically structured to prepare technicians to successfully pass the initial NATE Core Service Exam and to enrich the skills of installers and technicians who are:

- ☐ Just beginning in the HVACR industry
- ☐ Continuing education for upgrading knowledge and skills, or
- ☐ Preparing for certifications or licenses (NATE or ICE)

DirectCool Solution LLC
Changing The Way We Service Our Industry

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

The content presented in each course focuses on learning objectives that hav e been identified by HVACR industry groups (AHRI, NATE, RSES, ACCA, and PAHRA) as key knowledge for an HVACR technician. This program is offered completely online and consists of one (1) math review and eight (8) c ourses in a specific educational sequence for the HVAC Service Core Certificate. Even though it is self-paced, students receive a 60 day enrollment for each course. Students are registered for one course at a time. Upon successful completion of a course (a score of 75% or higher), students are registered into the next one and receive a certificate of completion. After successful completion of the math review and all eight courses students receive a Certificate of Completion for the Service Core Program.

The courses making up the Service Core Program are:

DirectCool Solution LLC
Changing The Way We Service Our Industry

1. Review 050 Applied Math
2. 101 Fundamentals
3. 102 Safety
4. 111 Electrical DC Theory Plus
5. 112 Electrical AC Theory Plus
6. 113 Electrical Common Components
7. 114 Electrical Motors
8. 121 Systems Properties & Measurement
9. 141 Refrigeration I

DIRECT COURSE STUDIES
WORKFORCE TRAINING
A Learning Environment That Respects Your Time

House Wiring

At the completion of this program students will be able to competently wire a residential home from prep to completion with the assistance our most intuitive simulation.

Course Outline

1. Preparation and planning a Residential wiring Job
2. Residential service Entrance and Equipment
3. Residential Electrical System Rough-In
4. Residential Residential Electrical System Trim-Out
5. Maintaining and Troubleshooting a residential Electrical Wiring System
6. Green House Wiring Techniques

DirectCool Solution LLC
Changing The Way We Service Our Industry

Plumbing

Upon completing this program. Students will be able to competently navigate successfully plumbing installation and troubleshooting.

Course covers

1. Communication Skills and professionalism
2. Pipe Joining Techniques
3. Plumbing Material Applications
4. Pipe Sizing and Water distribution
5. Sewers and Sewage Disposal Methods
6. Fixtures, drains and Stacks
7. Plumbing Mathematics and Geometry
8. Venting and Traps
9. Understanding Drawings

Computers

Discovering Computers Enhanced. Tools, Apps, Devices, and the impact of technology.

Course Outline

1. Introduction to Todays Technology
2. Connecting and communicating Online
3. Computers and Mobile Devices
4. Programs and Apps
5. Digital Security, Ethics, and privacy
6. Computing Components
7. Extended Capabilities of Computers and Mobile devices
8. Digital storage and Operating Systems
9. Communicating Digital Devices
10. Building solutions
11. Trouble Shooting Computers and Mobile Devices