HVAC • Plumbing • Electrical Training Center

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Contents

Total Tech is authorized by the Tennessee Higher Education Commission. This authorization must be renewed each year and is based on an evaluation by minimum standards concerning quality of education, ethical business practices, health and safety, and fiscal responsibility.

Staff

Don Miller
Institutional Director

Don Miller is Institutional Director of Total Tech, LLC. His work in the HVAC industry for the past 37 years has included the County of Orange in Southern California, where he maintained commercial split systems and commercial chillers. He owned and operated his own air conditioning service company for eight years in Tulsa, Oklahoma where he worked on both residential and commercial equipment. He accepted a position with Carrier Mid South in Nashville, Tennessee in 2003 where he worked as Customer Assurance Manager. Don founded Total Tech, LLC in 2006. Don's certifications include CMS in Controls Specialist from the Refrigeration Service Engineers Society (RSES), NATE Certifications in Heat Pump, Air Conditioning, Gas Furnaces and Senior Efficiency Analyst. He was also awarded the RSES Imperial Eastman Award for Controls Specialist in 1994.

Shawna Miller
Business Administrator

Shawna Miller is Business Manager of Total Tech, LLC. Over the past 32 years she has held Office Managerial positions and has had the responsibilities of customer service, bookkeeping and human resource manager, along with many others. She has been a previous air conditioning service company business owner and handled all office duties for eight years, along with assisting in fieldwork. During that tenure she handled customer service, payroll, human resource responsibilities and appointment scheduling, along with many other duties.

Beamon Lawrence
Electrical Instructor
Assistant Director

Beamon Lawrence holds a Master Electrician License and brings 18 years of commercial and residential electrical experience to Total Tech. He has worked across the country on electrical projects from design to fulfillment. His work in energy management has led to Energy Star ratings for many small commercial buildings and large skyscrapers. Beamon also has a background in secondary and post secondary education from which he holds a PhD. His passion for teaching coupled with his experience in the electrical field gives the technician a rich learning environment.

Staff

Mike Jones
HVAC Instructor

Mike Jones entered the HVAC trade in 2002, where he began as an installer and performed light diagnostics for a company in Panama City, Florida. He relocated to Tennessee in 2008 and wanted to remain in the HVAC industry, but desired to obtain a solid foundation as a Service Technician. Mike is a Total Tech graduate from 2012, and upon completion of the program began his own company where he worked until an opportunity arose for him to work with a local HVAC company in Nashville. Mike eventually ended up training other HVAC technicians that worked with the company and really found his passion. It brought great satisfaction to him knowing that he was making a difference in the lives of others, and passing on knowledge to allow them to make a better living for themselves, so when he was offered the position of HVAC Instructor at Total Tech he gladly accepted.

Matthew Tipton
HVAC Instructor

Matthew Tipton began his HVAC career in Panama City, Florida in August of 2010 as an installer. Afterwards he moved to Nashville, Tennessee to join a lifelong friend who had started an HVAC company. Here he learned the skills to become an HVAC technician. He acquired the knowledge and procedures to properly repair mechanical, electrical, and air flow related system malfunctions. He also assisted in the daily business operations that included job billing and advertisements. He recently attended the Total Tech HVAC classes and is now an HVAC Instructor.

Tony Cook
Electrical Instructor

Tony Cook brings 25 years of electrical experience to Total Tech. This experience encompasses managing several electrical service companies as well as serving as job foreman. Tony's superb work attitude and ethics have led him to projects all over the United States. These projects had both residential and commercial origins. Both large and small jobs have added the professional skills necessary to equip him to lead others in Total Tech's state-of-the-art lab. Tony's portfolio includes high voltage revamp jobs to low voltage cable installation, to security system installations and everything in between. Tony said, "Anyone who attends Total Tech will get the full benefit of 25 years of hard work in our high impact full hands-on electrical training program."

Staff

Greg Slade
Plumbing Instructor

Greg Slade is the fourth generation of his family to work in the plumbing industry and has worked full time in the trade since 1998. Greg learned the fundamentals of residential repair and installation while working alongside his father, grandfather and other members of the family in Michigan- where the Slade name was known for quality and his grandfather, Dick, served as the plumbing inspector for a number of years. After moving on to add high-end new construction, light commercial and industrial work in Michigan, Florida and Tennessee to his resume, Greg settled into his role as a top technician, trainer and tankless expert here in the Nashville area and on nationwide leaderboards. The ability to relate with clarity and passion the understanding of plumbing systems to coworkers and customers alike has been the key to his success. That understanding and that passion is what students should expect to gain with completion of our Plumbing Fundamentals program.

David Allen
Plumbing Instructor

David Allen has over 13 years of experience in the residential plumbing field. He has completed thousands of jobs in both new construction and service repair. He started as an apprentice at a family members plumbing company. He quickly realized how much he enjoyed the trade and thought that this could be more than just a job. He made the commitment to learn the trade and thereby would better not only himself but his family also. He enjoys the opportunity to share his experiences and help others that would like to pursue the plumbing trade. David wants to make a positive impact on someone else who is interested in making plumbing their career.

Mission Statement

Total Tech's mission is "to bring the most competent tradesmen to the most complex workforce by the most passionate instructors in the world."

The current trend in today's job market is shifting from the office to the trades. The installation and service industry needs workers to fulfill the workload placed on it. A common problem in every major metropolis is acquiring qualified tradesmen that can be trusted with the business assets to perform their work with honesty, integrity, and professionalism. Most traditional trade schools do not instill in their students all the necessary ingredients that make up a competent tradesman. The competent tradesman must understand system operation, system diagnostics as well as customer retention and business acumen. The competent tradesman's advantage is a quality education that brings practical application to these basic business concepts.

Today's workforce must be versatile enough to meet the industry's needs. The tradesman must wear several hats to be successful and to fulfill the company's financial goals. This means he/she must blend sales with service. The competent tradesman understands the value of marketing the service company in a way that benefits the customer. Understanding the cost of customer acquisition helps the tradesman understand why it is important to perform a complete service for the customer. This means not developing tunnel vision with just the problem at hand, but looking at the whole system to find possible hidden underlying problems that may exists and suggest honest solutions.

The information boom has bombarded us with facts and opinions from every imaginable source. An opinion on any subject is as close as the smartphone. This flood of information can carry with it a dark side. Ill-conceived or half-baked ideas can cloud the understanding of well-meaning technicians with poor practices that lead to system inefficiencies and possible property damage. The competent tradesman must evaluate the source of his/her information to test its validity. Professionalism is the industry standard that the information dispenser uses as a litmus test for best practices and procedures. A qualified instructor practices bona fide procedures that meet industry's standards. The effective instructor has already traveled the course of his/her students; going through times of uncertainty and making mistakes gives the learned instructor patience and humility. This experience connects the instructor with the students and makes them believe the instructor is human enough to make mistakes, and does not hold them to an unattainable level.

Facility

Total Tech's 10,000 square foot facility utilizes state-of-the-art equipment in both the classroom and the lab.

Plumbing Lab

Electrical Lab

HVAC Lab

Plumbing Classroom

The Total Tech Experience

Plumbing Program

Greg is covering the outline for the day's activities.

Plumbing students are practicing procedures for joining various types of pipe and tubing.

David is showing the students good practices for installing bathroom lavatories.

Electrical Program

Tony is instructing the students on how to properly troubleshoot electrical panels with the voltmeter and ampmeter.

Beamon is teaching the students on the proper use of Thermal Imaging as it applies to electrical connections.

Beamon is giving the students a practical lesson on current flow and system controls.

The Total Tech Experience

HVAC Analysis 1 Program

Mike instructs the students on electrical flow through the system with this dual fuel schematic.

Matt is showing the student the importance of taking time to gather good information from the system.

Mike emphasizes to the students the need to perform proper procedures during the evacuation process.

HVAC Analysis 2 Program

Mike explains the Total Tech method for diagnosing reversing valve malfunctions.

Before the students diagnose electrical malfunctions on their own, Matt carefully explains Total Tech's four-step electrical process.

Students fill out Total Tech's Troubleshooting Guide to determine which component is giving the heat pump system problems.

2015 Calendar

Classes limited to 14 students.

**Classes will not be held on the following holidays:
July 4th - Independence Day
September 7th - Labor Day
November 26th - Thanksgiving Day
December 25th - Christmas Day

HVAC Classes
July 2015 – September 2015

July 2015
HVAC Analysis I Technician Training Two Week Course
June 29th - July 10th 7:30am to 12:30pm
(There will be 1 full day due to July 4th holiday)

July 2015
HVAC Analysis II Technician Training Two Week Course
13th - 24th 7:30am to 12:30pm

July 2014
NATE Preparation Class and Online Testing
11th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

July 2015
HVAC Analysis I Technician Training One Week Course
27th - 31st 7:00am to 5:30pm

August 2015
HVAC Analysis II Technician Training One Week Course
3rd - 7th 7:00am to 5:30pm

August 2015
NATE Preparation Class and Online Testing
8th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

August 2015
HVAC Analysis I Technician Training Two Week Course
August 24th - September 4th 7:30am to 12:30pm

September 2015
HVAC Analysis II Technician Training Two Week Course
8th - 18th 7:30am to 12:30pm
(There will be 1 full day due to Labor Day holiday)

September 2015
NATE Preparation Class and Online Testing
12th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

September 2015
HVAC Analysis I Technician Training One Week Course
21st - 25th 7:00am to 5:30pm

September 2015
HVAC Analysis II Technician Training One Week Course
September 28th - October 2nd 7:00am to 5:30pm

*Class Schedule Subject To Change. Check Website For Current Schedule.

2015 Calendar

Classes limited to 14 students.

****Classes will not be held on the following holidays:**
November 26th - Thanksgiving Day
December 25th - Christmas Day

HVAC Classes (Contd.)
September 2015 - December 2015

September 2015
HVAC Analysis I Technician Training Evening Course - 7 Week
September 28th - November 12th
Mon/Tues OR Wed/Thurs 6:00pm - 9:00pm - 1 Sat. Class Required
Mon/Tues will attend October 10th 8:00am - 5:00pm
Wed/Thurs will attend October 17th 8:00am - 5:00pm

October 2015
NATE Preparation Class and Online Testing
3rd 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

October 2015
HVAC Analysis I Technician Training Two Week Course
5th - 16th 7:30am to 12:30pm

October 2015
HVAC Analysis II Technician Training Two Week Course
19th - 30th 7:30am to 12:30pm

October 2015
NATE Preparation Class and Online Testing
24th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

November 2015
HVAC Analysis I Technician Training One Week Course
2nd - 6th 7:00am - 5:30pm

November 2015
HVAC Analysis II Technician Training One Week Course
9th - 13th 7:00am - 5:30pm

November 2015
NATE Preparation Class and Online Testing
14th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

December 2015
HVAC Analysis I Technician Training One Week Course
November 30th - December 4th 7:00am - 5:30pm

December 2015
HVAC Analysis II Technician Training One Week Course
7th - 11th 7:00am - 5:30pm

December 2015
NATE Preparation Class and Online Testing
12th 8:00am to 12:00pm NATE Preparation Class & 1:00pm to 5:00pm
Core/Heat Pump Online Testing

*Class Schedule Subject To Change. Check Website For Current Schedule.

2015 Calendar

Classes limited to 12 students.

****Classes will not be held on the following holidays:**
July 4th - Independence Day
September 7th - Labor Day
November 26th - Thanksgiving Day
December 25th - Christmas Day

Plumbing Fundamentals
July 2015 – December 2015

July 2015
Four Week Course
6th – 31st 7:30am – 12:30pm

August 2015
Four Week Course
August 24th - September 18th 7:30am – 12:30pm
(There will be 1 full day due to Labor Day holiday)

September 2015
Two Week Course
September 28th - October 9th 7:00am – 5:30pm

October 2015
Four Week Course
October 19th - November 13th 7:30am – 12:30pm

November 2015
Two Week Course
November 30th - December 11th 7:00am – 5:30pm

December 2015
Four Week Course
December 28th - January 22nd 7:30am – 12:30pm
(There will be 1 full day due to New Year's holiday)

*Class Schedule Subject To Change. Check Website For Current Schedule.

2015 Calendar

Classes limited to 12 students.

****Classes will not be held on the following holidays:**
July 4th - Independence Day
September 7th - Labor Day
November 26th - Thanksgiving Day
December 25th - Christmas Day

Electrical Fundamentals
July 2015 – December 2015

July 2015
Four Week Course
July 13th - August 7th 7:30am - 12:30pm

August 2015
Four Week Course
August 10th - September 4th 7:30am - 12:30pm

September 2015
Four Week Course
September 8th - October 2nd 7:30am - 12:30pm
(There will be 1 full day due to Labor Day holiday)

October 2015
Two Week Course
5th - 16th 7:00am - 5:30pm

October 2015
Four Week Course
October 19th - November 13th 7:30am - 12:30pm

December 2015
Two Week Course
November 30th - December 11th 7:00am - 5:30pm

December 2015
Four Week Course
December 28th - January 22nd 7:30am - 12:30pm
(There will be 1 full day due to New Year's holiday)

*Class Schedule Subject To Change. Check Website For Current Schedule.

Programs

Course Name: HVAC Analysis I Technician Training

Course Costs: Tuition =$2,012.50 + Books = $100.00 + Supplies = $50.00 = Total Tuition = $2,162.50

Prerequisites: High School Diploma or GED or a "passed" Wonderlik Scholastic Level Exam with a minimum score of 15. Mechanical aptitude and a drive to learn are mandatory.

Introduction: HVAC Analysis I Technician Training is a ten (10) day, fifty hour (50) course designed to give the student a blend of applied theory and hands-on experience, with approximately 20% of time spent in the classroom and 80% of time spent in the lab. Total Tech offers the student the best of both worlds within one training session. Each day the students will not only be taught applied theory in the classroom but also experience the theory in the lab. Each session will end with a lab exercise that "makes sense" of the theory. This ten (10) day course will have nine (9) applied theory sessions and nine (9) lab sessions. The course will end with a written and a lab test. A Certificate of Attendance will be awarded to the students with an overall score of less than 70%. A Certificate of Achievement will be awarded to the students with an overall score of 70% or greater.

The Goal: This course is designed to familiarize the student with the purpose and design of the air conditioning system. To understand the refrigeration process as it relates to human comfort. Students will have a good understanding of what is necessary to perform start-ups on a new air conditioning system and perform proper service procedures on existing systems. The goal of this course is to give the students the theory and hands-on training necessary to enter the HVAC field.

Bottom Line: The graduating student should have the knowledge to properly start-up a new HVAC system. He/she will also be able to gather the five diagnostic indicators used in determining system performance.

Course Outline:

1. People Comfort
2. The Refrigeration System
3. R-22 & R-410A Refrigerants
4. Pressure/Temperature Charts
5. The Tools of the Trade
6. The Refrigerant Line Set
7. Filter Dryers
8. Silver Brazing & Nitrogen
9. System Evacuation
10. Proper Charging Techniques
11. Low & High Voltage Wiring
12. EPA Refrigerant Certification

Objectives:

Upon completion of the HVAC Analysis I Technician Training program the students will have learned the following:

1. How the air conditioning system is used to create human comfort.
2. The basic components of the refrigeration system and their function.
3. The role of refrigerant in the refrigeration process.
4. The relationship of pressure and temperature with R-22 and R-410A refrigerants.
5. The five diagnostic indicators used for system performance.
6. The proper use of tubing cutters, swedging tools, flaring tools, and pipe benders.
7. The proper use of the charging manifold.
8. Refrigerant Recovery.
9. Properly sizing refrigerant line sets.
10. The purpose of filter dryers in a refrigeration system.
11. Proper techniques for silver brazing with the use of dry nitrogen.
12. Acetylene and Oxygen safety.
13. The vacuum pump and proper system evacuation levels.
14. Leak testing the refrigeration system.
15. Starting up an air conditioning system.
16. Electrical safety in dealing with low and high voltage circuits.
17. Installing low voltage wiring.
18. The installation and operation of the thermostat.
19. The installation of the high voltage wiring from the disconnect switch to the outdoor unit.
20. Reading the volt meter and amp probe.
21. Proper refrigerant handling practices and the EPA Refrigerant Certification.

Programs

Course Name: HVAC Analysis II Technician Training

Course Costs: Tuition = $2,012.50 + Books = $100.00 + Supplies = $50.00 = Total Tuition = $2,162.50

Prerequisites: High School Diploma or GED or a "passed" Wonderlik Scholastic Level Exam with a minimum score of 15 AND HVAC Analysis I Technician Training.

Introduction: HVAC Analysis II Technician Training is a comprehensive ten (10) day, fifty (50) hour course designed to give the air conditioning service technician a blend of applied theory and hands-on experience, with approximately 20% of time spent in the classroom and 80% of time spent in the lab. Total Tech offers the technician the best of both worlds within one training session. Each day the technicians will not only be taught applied theory in the classroom but also experience the theory in the lab. Each session will end with a lab exercise that "makes sense" of the theory. This ten (10) day course will have nine (9) applied theory sessions and nine (9) lab sessions. The technician will finish the course by taking a written and a lab test. A minimum overall total score of 50% will qualify the technician for TT Level 1. If the overall total score is higher than 62% the technician will be placed in the appropriate corresponding TT Level from two (2) to five (5). See table below for complete list of Tech Levels available to students.

Percentage Total	Total Tech Level
50% to 61.9%	Tech Level 1
62% to 72.9%	Tech Level 2
73% to 83.9%	Tech Level 3
84% to 94.9%	Tech Level 4
95% to 100%	Tech Level 5

The Goal: This course is designed for air conditioning service technicians who are willing to pay the price and learn their trade. This is a high impact course for serious learners. Graduating technicians will have in their mental inventory the knowledge necessary to be a good service technician. A knowledgeable technician is a competent technician. A competent technician is a gem. The goal of this course is to place competent, confident, and content technicians in the workforce.

Bottom Line: This is not a college course for entry-level engineers. It is designed for service technicians who want to know their trade. The TT Level 5 graduate will have a good understanding of the technology that makes up the air conditioning system, the technique needed to service the air conditioning system, and the technicians' role in the air conditioning service industry.

Course Outline:

1. The Service Technician
2. The Air Conditioning Refrigerant Circuit
3. Air Conditioning Diagnostic Protocol
4. The Heat Pump Refrigerant Circuit
5. Establishing Guidelines for Saturated Temperatures
6. Heat Pump Diagnostic Protocol
7. Understanding Electrical Schematics
8. Gas Furnace Operation
9. Calculating Airflow
10. Calculating BTUs
11. Determining Duct Losses

Objectives:

Upon completion of the HVAC Analysis II Technician Training Program the technicians will have learned the following:

1. The air conditioning and heat pump refrigerant circuits for both R-22 and R-410A systems.
2. The function and proper use of the tools necessary for good service practices.
3. The service skills necessary to quickly and accurately diagnose refrigerant system problems using the Miller Method.
4. The service skills necessary to read ladder schematics and understand system operation using the schematic and the manufacturer's literature.
5. The service skills necessary to measure system airflow using the Temperature Rise Method, the Velocity Pressure Method, and the Traverse Method.
6. The service skills necessary to calculate system BTUs and duct work losses.
7. The electrical sequence of operation of the gas furnace.
8. The service skills necessary to properly diagnose electrical malfunctions of a gas furnace.
9. The soft skills necessary for ultimate customer satisfaction and company growth.

Programs

Course Name: Plumbing Fundamentals

Course Costs: Tuition = $3,975.00 + Books & Supplies = $350.00 = Total Tuition = $4,325.00

Prerequisites: High School Diploma or GED or a "passed" Wonderlik Scholastic Level Exam with a minimum score of 15.

Introduction: Plumbing Fundamentals is a 100-hour course designed to educate students on the importance of plumbing as a critical health and safety concern for society and on the opportunity, demand and potential in the modern plumbing industry. An introduction to the tools, materials, and terminology used in plumbing today combined with classroom demonstrations and hands-on practice in our plumbing laboratory will prepare a student to begin a career in the plumbing industry. Twelve cumulative modules will be covered with approximately 20 hours of classroom instruction and demonstration and 80 hours of hands on practice in the laboratory. The course will end with a written and a lab test. A Certificate of Attendance will be awarded to the students with an overall score of less than 70%. A Certificate of Achievement will be awarded to the students with an overall score of 70% or greater.

The Goal: This course is designed to establish the drive and desire to begin a successful career in the trade of professional plumbing, to familiarize students with the tools, materials and terminology used in the modern plumbing industry, and to build confidence and competence through hands-on experience with the installation and repair of a complete plumbing system. A knowledgeable technician is a competent technician. A competent technician is a gem. The goal of this course is to place competent, confident, and content technicians in the workforce.

Bottom Line: This course is designed for service technicians who want to know their trade. The Total Tech Plumbing Fundamentals graduate will have a good understanding of the various materials used in the plumbing trade, the technique needed to service the plumbing system, and the technicians' role in the plumbing service industry.

Course Outline:

1. Intro to the Plumbing Trade
2. Joining Piping and Tubing
3. Hydrants and Special Valves
4. Water and DWV Layout
5. Toilet Installation and Repair
6. Lavatory Installation and Repair
7. Kitchen Installation and Repair
8. Tub/Shower Installation and Repair
9. Water Heater Installation and Repair
10. Pump Systems
11. Drain Cleaning
12. Commercial Applications

Objectives:

Upon completion of the Plumbing Fundamentals Training Program the technicians will have learned the following:

1. Safety on the job, cutting and drilling various materials, working with piping and tubing.
2. How to properly put together various piping and tubing materials.
3. Installation, diagnosis, and repair of various valves.
4. How to properly install drain and water lines via schematics according to various requirements.
5. Installation, assembly, removal, and reinstallation of toilets.
6. Installation, diagnosis, and repair of various types of lavatory faucets.
7. Installation, diagnosis, and repair of various items in the kitchen, including sinks, garbage disposals, faucets, dishwashers, hot water dispensers and icemakers.
8. Installation, diagnosis, and repair of tubs, showers, and handles.
9. Proper operation and workings of hot water heaters, including diagnosis and repair.
10. Installation, diagnosis, and repair of various types of pump systems, including sump pumps, condensate pumps, septic tanks and sewage pumps.
11. How to diagnose and clean plumbing drains utilizing cable machines and sewer cameras.
12. Installation, diagnosis, and repair of some commercial equipment, such as commercial sinks, commercial water heaters, grease traps, and commercial toilets.

Programs

Course Name: Electrical Fundamentals

Course Costs: Tuition = $3,975.00 + Books & Supplies = $350.00 = Total Tuition = $4,325.00

Prerequisites: High School Diploma or GED or a "passed" Wonderlik Scholastic Level Exam with a minimum score of 15.

Introduction: The Electrical Fundamentals course provides an introduction to electrical theory and residential applications. Its purpose is to provide the student with a firm foundation in electrical theory and application through classroom instruction and laboratory exercises. The course begins with safety procedures in the workplace, electrical basics and the tools of the trade. Next the students will begin wiring residential modules in the laboratory. As the theory progresses in the classroom the students will apply the theory in the lab. Upon completion of the course, the student will be able to install residential electrical systems and successfully diagnose those systems. Students will gain approximately 20 hours of classroom instruction and demonstration and 80 hours of hands on practice in the laboratory. The course will end with a written and a lab test. A Certificate of Attendance will be awarded to the students with an overall score of less than 70%. A Certificate of Achievement will be awarded to the students with an overall score of 70% or greater.

The Goal: This course is designed to establish the drive and desire to begin a successful career in the electrical trade, to familiarize students with the tools, materials and terminology used in the electrical industry, and to build confidence and competence through hands-on experience with the installation and repair of a complete electrical system. A knowledgeable technician is a competent technician. A competent technician is a gem. The goal of this course is to place competent, confident, and content technicians in the workforce.

Bottom Line: This course is designed for service technicians who want to know their trade. The Total Tech Electrical Fundamentals graduate will have a good understanding of the various materials used in the electrical trade, the technique needed to service the wiring system, and the technicians' role in the electrical service industry.

Course Outline:

1. Introduction to Electrical Theory
2. Safety in the Workplace
3. Residential Wiring: General Application
4. Lighting
5. Residential Wiring: Specialized Circuits
6. Devices and Generators
7. Troubleshooting Residential Electric Systems
8. Solar Panels

Objectives:

Upon completion of the Plumbing Fundamentals Training Program the technicians will have learned the following:

1. Science of electricity, coverage of various measuring services, meters and measuring devices, how to identify wires and their application, circuits and voltage.
2. Safety on the job, electrical codes, working with city, county, and state code employees, working with blue prints, the inspection process.
3. Learn wiring methods and layouts, electrical devices, various lighting applications such as switch types, placement, and wiring, learn process of residential service from installation to activation.
4. Learn kitchen and bath wiring methods, various light fixture types, design and layout of kitchen and bath circuits, including conductor sizing for appliances, kitchen and bath wiring.
5. HVAC circuit rough-in, disconnects, pools, spas, hot tubs, indoor baths, low voltage systems, security and fire alarms, grounding, pipe bending.
6. Light fixture hanging and mounting, transfer switches, generator operation and back-up power.
7. Learn to troubleshoot various malfunctions and properly repair in training modules.
8. Learn solar panel design and installation.

Programs

Course Name: Manual J Load Calculation

Course Costs: Tuition = $350.00

Prerequisites: High School Diploma or GED or a "passed" Wonderlik Scholastic Level Exam with a minimum score of 15 AND have completed the HVAC Analysis I course OR Presently employed in the air conditioning field OR have at least 1 year of previous field experience at the Apprentice or Journeyman level.

Introduction: The Manual J Load Calculation class is for all air conditioning tradesmen. This class teaches its students the proper methods used in matching the conditioned space to the correct size of air conditioning unit and air distribution system. Old "Rules of Thumb" for equipment sizing are a detriment to the industry. Technicians must replace poor practices with proven procedures, which accommodate high efficiency equipment. Modern structures, as well as high efficiency equipment, require accurate calculations for proper equipment match-ups. Energy efficiency, indoor air quality, and human comfort require proper equipment selection. This class lays the foundation of solid methods to accurately determine the equipment size of a residential air conditioning system.

The Goal: The objective of this course is to teach students how to properly perform a Manual J Load Calculation and how to streamline the process by using the "Right-Draw® software.

Course Outline:

1. Residential Load Calculation (House #1)
2. Block Load using Wrightsoft Right-Draw®
3. Room Load using Wrightsoft Right-Draw®
4. Additional Residential Load Calculation (House Draws)
5. TVA Requirements

Objectives: Upon completion of the Manual J course the student will have a good comprehension of the Manual J AE and will be able to perform a Manual J 8th Edition Load Calculation using the Right-J® software.

Admissions

Class Enrollment:
Class enrollment will be accepted until class is full or until day prior to first day of class, whichever comes first.

Students can enroll one of two ways:

1. The Registration page found on the Total Tech website at www.TotalTechSchool.com
2. Contact Total Tech offices at (615) 459-8024

Admission Policy:
HVAC Analysis I:

1. High School Diploma or
2. GED or
3. A "Passed" Wonderlik Scholastic Level Exam with a minimum score of 15.

HVAC Analysis II:

1. High School Diploma or
2. GED or
3. A "Passed" Wonderlik Scholastic Level Exam with a minimum score of 15

AND

4. HVAC Analysis I Technician Training Certificate of Achievement

Plumbing Fundamentals:

1. High School Diploma or
2. GED or
3. A "Passed" Wonderlik Scholastic Level Exam with a minimum score of 15.

Electrical Fundamentals:

1. High School Diploma or
2. GED or
3. A "Passed" Wonderlik Scholastic Level Exam with a minimum score of 15.

Manual J Load Calculation:

1. High School Diploma or
2. GED or
3. A "Passed" Wonderlik Scholastic Level Exam with a minimum score of 15

AND

4. Have completed the HVAC Analysis I Technician Training course or
5. Presently employed in the air conditioning field or
6. Have at least 1 year of previous field experience at the Apprentice or Journeyman level.

**NO LATE ENROLLMENT WILL BE ACCEPTED

Attendance Policy:
All technicians are expected to attend every session. An absence or tardy will penalize the technician 1% of the final grade per day. Due to the nature of these courses, if a student is absent 2 days due to mitigating circumstances, the student will be dropped from the course and will be required to re-enroll in the next available class.

Progress Reports:
Due to the nature of the courses, there will be no progress reports given during attendance.

Grading Procedure:
In the HVAC Analysis I Technician Training course a Certificate of Attendance will be given to students with an overall score of less than 70%. A Certificate of Achievement will be awarded to the students with an overall score of 70% or greater. In the HVAC Analysis II Technician Training course a Certificate of Achievement will be awarded to each student, along with an appropriate Total Tech Level ranging from I to V based on the students total course score. In the Plumbing Fundamentals and Electrical Fundamentals courses a Certificate of Attendance will be given to students with an overall score of less than 70%. A Certificate of Achievement will be awarded to the students with an overall score of 70% or greater.

Admissions (Contd.)

Student Conduct:
Students are expected to conduct themselves in a safe and appropriate manner at all times. Any students conducting themselves in an unsafe or inappropriate manner will be subject to immediate dismissal with no refunds and will not be readmitted to the school.

Grievance Procedure:
In the case of any grievance or complaint, students are to contact Shawna Miller, Business Administrator, via mail at Total Tech, LLC 909 Murfreesboro Pike, Nashville, Tennessee 37217 or via telephone at (615) 459-8024. If a complaint is not settled at the institutional level, the student may contact the Tennessee Higher Education Commission, Nashville, TN 37243-0830. Telephone: (615) 741-5293. If the institution uses a mediation clause in its enrollment agreement, the catalog must describe the steps required of the student and/or the institution to initiate the mediation process.

Previous Education Credits:
Total Tech, LLC is a special purpose institution. That purpose is to change the way the industry trains HVAC service technicians by applying new concepts to education. These concepts include applied technical training, service technician management, and customer relations. This purpose does not include preparing students for further college study. Students should be aware that transfer of credit is always the responsibility of the receiving institution. Whether or not credits transfer is solely up to the receiving institution. Any student interested in transferring credit hours should check with the receiving institution directly to determine to what extent, if any, credit hours can be transferred. Total Tech LLC does not accept credits earned from prior education and training.

Refund and Cancellation Policy:
Should any applicant/student withdraw or be terminated for any reason, ALL REFUNDS WILL BE MADE IN ACCORDANCE WITH THE FOLLOWING POLICY AND SCHEDULE:

1. Cancellation must be made in writing.
2. If a student withdraws from the institution on or before the first day of classes, or fails to begin classes, the refund shall equal the sum of all amounts paid or to be paid by or on behalf of the student for the period of enrollment, less an administrative fee of one hundred dollars ($100.00).
3. If after classes have commenced and before expiration of ten percent (10%) of the period of enrollment for which student was charged, a student withdraws, drops out, is expelled, or otherwise fails to attend classes, the refund shall equal seventy-five percent (75%) of all amounts paid or to be paid by or on behalf of the student for the period, less administrative fee of one hundred dollars ($100.00).
4. If after expiration of ten percent (10%) of the period of enrollment for which student was charged, and before expiration of twenty-five percent (25%) of the period, a student withdraws, drops out, is expelled, or otherwise fails to attend classes, the refund shall equal twenty-five percent (25%) of all amounts paid or to be paid by or on behalf of the student for the period, less administrative fee of one hundred dollars ($100.00).
5. If after expiration of twenty-five (25%) of the period of enrollment for which he or she was charged, a student withdraws, drops out, is expelled, or otherwise fails to attend classes, the student may be deemed obligated for one hundred (100%) of the tuition, fees and other charges assessed by the institution.
6. When computing student refunds, the last day of attendance for a student shall be one of the following:
   (a) The date on the expulsion notice if a student is expelled from the institution; or
   (b) The date the institution receives a written notice of withdrawal from a student; or
   (c) When no written notice of withdrawal is given, the institution shall use the last day of attendance as the date of withdrawal; or
   (d) Fails to return from an approved Leave of Absence (LOA).

Admissions (Contd.)

Veterans Refund and Cancellation Policy:
This institution has and maintains a policy for the refund of the unused portion of tuition and other charges in the event the eligible person withdraws or is discontinued at any time prior to the completion of the course. Such policy provides that the amount charged to the eligible person for tuition and other charges for a portion of the course shall not exceed the approximate prorated portion of the total charges for tuition and other charges that the length of the completed portion of the course bears to its total length. All veteran benefits will be terminated tot the Veterans Administration upon the day of dismissal.

Placement Assistance:
Total Tech has no placement assistance.

Class Supplies:
All class supplies are included in the cost of tuition, which consist of but are not limited to, pens, pencils, and paper. Uniforms are NOT required, but students are advised to wear long pants (preferably blue jeans), and must wear close toed shoes……no sandals will be permitted.

**NOTE – Books are mandatory to be purchased from Total Tech LLC due to the uniqueness of the books.

Equal Opportunity Laws:
This institution will comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.), Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 1681 et seq.), Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), the Age Discrimination Act of 1975 (42 U.S.C. 6101 et seq.), and all Federal regulations adopted to carry out such laws. This assurance is directed to the end that no person in the United States shall, on the ground of race, color, national origin (Title VI), handicap (Section 504), sex (Title IX, in education programs and activities only), or age (Age Discrimination Act) be excluded from participation in, to be denied the benefits of, or be subjected to discrimination under any program or activity of the Signatory receiving Federal financial assistance or other benefits under statutes administered by VA (Department of Veterans Affairs), the ED (Department of Education), or any other Federal agency. This assurance applies whether assistance is given directly to the recipient or indirectly through benefits paid to a student, trainee, or other beneficiary because of enrollment or participation in a program of the Signatory.

HVAC TRAINING CENTER

Total Tech, LLC
909 Murfreesboro Pike Nashville TN 37217

www.TotalTechSchool.com