



TECH ZONE
HVAC SCHOOL

Student Hand Book

Licensed & Regulated by TWC

License # S3960

Licensed and Regulated by ESCO for EPA Section
608 Universal Technician Certification

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TECH ZONE

HVAC SCHOOL

617 East Second Street
Irving, Texas
tel. 972.579.8822

Director@TechZoneHVACR.com
www.TechZoneHVACR.com

Identifying Data

Volume 12

12-3-2021

Effective Date 2021-2022

Text Book

Modern Refrigeration and Air Conditioning Book

Volume Number: 21st edition

Date of Publication: 2021

Founded in Irving, Texas over 10 years ago, our school is proud to offer affordable, practical, hands-on training in HVAC and Refrigeration. Our instructors have immense knowledge and many years of real world experience in the field. Our passion is helping students gain the knowledge and confidence needed to succeed in the industry, whether entering into the HVAC profession for the first time or to expand on existing skills for technicians already in the field. We take a hands on approach using our interactive lab alongside theory and lecture lessons in an interactive classroom setting.

Facilities and Equipment

Reception Area • Director's Office • Classroom • Lab (hands-on class)
Two Restrooms (handicap accessible) • break room

EQUIPMENT

Air Handlers (Gas & Electric) • Condensers • Commercial Cooler
Portable Oxyacetylene Tanks
Voltmeters • Ammeters • Recovery Machine /Recovery Cylinders • Nitrogen
Vacuum Pump • Charging Manifolds • Handtools • Safety Equipment Practice
Wiring Electrical Trainers

Key Staff

Director: Branton Harden
Owner: Ripple Learning LLC

Fees and Tuition

Tuition: \$3350 (includes \$200 deposit) Includes access to the book, tools, and supplies *while in class*.
Book Replacement Fee: **\$115** (if lost, stolen, or damaged)
Tools sold separately when available, prices may vary.

Minimum Deposit of \$200.00 required to reserve space
(applied to balance at time of full payment)

School Calendar

HOLIDAYS OBSERVED:

New Years Day • 4th of July • Memorial Day • Labor Day
Thanksgiving • Christmas

Enrollment Periods

Monday through Friday: 9:00 a.m.-5:00 p.m.
Saturday and After hours by Appointment

Class (Beginning & Ending Periods)

FULLTIME DAY (2 WEEK):

Mon-Fri 8:00 a.m. to 6:00 p.m.

FULLTIME DAY (3 WEEK):

Mon-Fri 9:00 a.m. to 4:00 p.m. (9a-3p on 3rd week)

NIGHT (10 WEEK):

Mon-Thurs 7:00 p.m.to 9:30 p.m.

NIGHT (5 WEEK):

Mon-Fri 7:00 p.m. to 11:00p.m.

SATURDAY (10 WEEK):

Saturdays 8:00 a.m. to 6:00 p.m.

SATURDAY (10 WEEK)
Saturdays 8:00 a.m. to 6:00 p.m.
100 Hrs of Total Course Time

Scheduled Vacation for School

The school will take an annual vacation from its scheduled curriculum during the Christmas/New Years holiday period. At all other times classes will be scheduled throughout the calendar. During the “full-time” class periods, in the event that a scheduled class day is superceded by a scheduled holiday (i.e. The Fourth of July, Memorial Day, Labor Day, or Thanksgiving) that class day will be “made-up” on the Monday which follows the scheduled two (2) week class. In other words, the Monday class period that is taken up for Memorial Day, will be rescheduled for the following Monday which would normally be an “open” day in the regular “full-time” scheduled week.

This same formula will be followed for the evening “part-time” classes whereby the class which would normally be held on Thanksgiving evening will be postponed until the following Friday. The same would apply for the Fourth of July, as well as the other holiday periods.

Therefore, irrespective of any holiday period, all classes will run and be completed without a significant break in the subject matter which we will be teaching.

We apologize for any inconvenience which this might cause.

Normal Hours of Operation

Office Hours: Monday through Friday 9:00 a.m. to 5:00 p.m.
Saturday by appointment only

School Hours: Monday through Friday 8:00 a.m. to 11:00 p.m.

Saturday Classes: 8:00 a.m. to 6:00 p.m.

Breaks and Mealtimes

“Full-Time Classes” and Saturday classes will have a 10 minute break at 10:30 a.m. and a mealtime break from 12:50 until 1:10 each day. The next scheduled break will be at 3:30 p.m. for an additional 10 minutes in the afternoon sessions. “Night Classes will have a 10 minute break at 8:30 p.m. and 10 p.m., if applicable.

Admission/Enrollment Criteria

Minimum age: 18 years

Specific entrance requirements include a high school education or G.E.D. or you may take the school’s entrance test which will test your

ability to read and gain comprehension of the principals to be covered. This entrance exam will concern itself with basic reading and math and will require a score of 70% to qualify for enrollment in the program.

Policy for Granting Enrollment Credit

The school will review prior training in HVAC, the electrical field, motor industry or general maintenance. The school director will interview applicant to discuss prior training in order to determine ability to complete necessary school requirements before granting enrollment credit.

Program Title and Description

Refrigeration, Air Conditioning and Heating (HVAC-R)

The HVAC-R program is designed to teach students the basics in refrigeration, air conditioning and heating through an understanding of thermodynamics and the pressure/temperature relationship. Students will also learn the basics in the electrical system and acquire a general working knowledge of motors through diagnosis of the problems they can encounter and the use of tools of the trade in their repair. The HVAC-R program will take theory and mechanical action to the level of comprehensive understanding for students enrolled here at TechZone HVAC-R Air Conditioning & Refrigeration School. Students will be able to find jobs such as those noted on page five (5) under “obtainable skills.”

Program Outline

Subject	Class	Lab
Theory	08	00
Electrical (Basic)	07	03
Motors	03	05
Metering Controls (Super Heat)	05	05
Condensing Cycle (Subcooling)	06	04
EPA Studies	06	00
Furnaces	05	05
Refrigerant Recovery	03	07
Tools of the Trade	02	08
Charging (Techniques)	02	08
R-410A (Safety/Techniques)	03	07
Total = 100	48	52

Time required to complete the HVAC-R program is two (2) or three (3) weeks full time, five (5) weeks for 5 WK Night, and ten (10) weeks for 10 WK Night and ten (10) weeks for Saturday.

Obtainable Skills

Licensed Technician

Continue your education in HVAC to become a licensed technician and operate your own HVAC business.

Service Technician

Continue your education as a service technician for HVAC systems on a commercial or residential level.

Installer

Continue your education to further understand the duties of an installer of air handlers and condensers on new construction and retro-fit.

Maintenance Worker

Continue your education to advance your career growth in the field of HVAC for maintenance work in the apartment building supervisor field.

Motors

Continue your education to obtain a basic understanding of motors for employment with motor shops in rewinding and rebuilding commercial motors.

Counter Sales

Continue your education to increase your working knowledge of HVAC equipment for counter sales with HVAC-R suppliers .

Auto Industry

Continue your education to increase your knowledge of automobile air conditioning compressors for employment as a service tech in the auto industry.

Synopsis of Each Subject

THEORY

Students learn about application of latent heat—Pressure/temperature Relationship—Heat transfer—Sensible Heat—Understanding a unit of heat (Btu)

Pre-requisites—None

Class—08 hrs./Lab—00 hrs.

EPA Certification 608 Test Studies

Students prepare for EPA 608 Certification test and review the EPA Study guide in detail.

Pre-requisites - None

Class - 06 hrs./Lab - 00 hrs.

ELECTRICAL (BASIC)

Students learn about diagnose and repair problems in the system—electromagnetism—how it works—where do we use this magnetic field.

Pre-requisites—Theory

Class—7 hrs./Lab—3 hrs.

MOTORS

Students learn the types of motors and windings used in Hermetic compressors, how to diagnose the windings, where to install components.

Pre-requisites—Electrical

Class—3 hrs./Lab—5

hrs. 5

METERING CONTROLS (Super Heat)

Students will learn pressure and temperature relationship with refrigerants (PT Chart)—How does a refrigerant control meter work and what is its relationship to the evaporator (what is “superheat”).

Pre-requisites—Theory/motors Class—5 hrs./Lab—5 hrs.

TOOLS OF THE TRADE (Brazing/Vacuum Pumps)

Students learn to safely use the right tools for the job from calibrating gauges—vacuum (non-condensibles)—to keeping the internal system clean when brazing. Students will learn how to repair leaks and pressure test the system before charging.

Pre-requisites—Theory/electrical/motors Class—2 hrs./Lab—8 hrs.

CONDENSING CYCLE (Subcooling)

Students acquire an understanding of head pressure and the effects it has on condensing temperature and evaporator temperature and what is meant by the term “subcooling”.

Pre-requisites—Theory/metering controls/
Tools of the trade/electrical/motors Class—4 hrs./Lab—4 hrs.

FURNACES

Students learn the danger of carbon monoxide and how to vent such gases outside and what causes such gases to form. They also learn how to diagnose a fan control board on a furnace and how to replace the safety devices put there by the manufacturer.

Pre-requisites—Electrical/motors/ Tools of the trade Class—5 hrs./5 hrs.

REFRIGERANT RECOVERY

Students learn why we recover refrigerant from a closed system and they learn the method of safely recovering refrigerants from a system..

Pre-requisites—Theory/tools of the trade Class—3 hrs./Lab—7 hrs.

CHARGING (Techniques)

Students learn different methods of safely charging a system and how to diagnose the status of the system before charging.

Pre-requisites—Theory/electrical/motors/
Tools of the trade/refrigerant recovery Class—2 hrs./Lab—8 hrs.

R-410A (Safety and Techniques)

Students learn the safety factors of the refrigerant replacing R-22 and the fractionation potential of this zeotropic refrigerant and they also learn recovery and charging methods.

Pre-requisites—Theory/tools of the trade Class—3 hrs./Lab—7 hrs.
Refrigerant Recovery/Charging

Course Length

Full-Time (2 Week) Classes are for 10 hours per day Monday thru Friday (8:00 a.m. - 6:00 p.m.)for two (2) weeks.Total length of class is 100 hours.

Full-Time (3 Week) Classes are for 7 hours per day Monday thru Friday (9:00 a.m. - 4:00 p.m.)for two (2) weeks, and 6 hours a day (9a to 3p) on the third week. Total length of class is 100 hours.

Night (10 Week) Classes run for two and a half (2½) hours per night (7:00-9:30 p.m.) from Monday through Thursdays for 10 weeks. **Night (5 week) Classes** run for 5 weeks for 4 hours per night (7:00 -11:00p) from Monday thru Friday. Total length of class is 100 hours.

Saturday (10 Week) Classes are for 10 hours for 10 Saturdays from 8:00 a.m. to 6:00 p.m.Total length of class is 100 hours.

Grading and Marking System Used

The School grading period is weekly. Students will be given a total of two (2) tests. A passing grade will be mastery of no less than 80% of the subject matter on each test. Students will have the opportunity to take each test twice (if needed) to receive a passing grade.

Full time classes will take a multiple choice test on week one (1) covering theory, motors and the HVAC electrical system. On the second week, they will take a “true and false” test on furnaces and safety for a total of two (2) tests.

Part time classes will take a multiple choice test on week four (4) on theory, the HVAC electrical system and motors; and on the ninth week they will take a final “true false” test on furnaces and safety for a total of two (2) tests.

Policy Concerning Satisfactory Attendance

Students will be expected to pay attention at all times during classroom periods and their participation will be required in this HVAC-R course. If the instructor deems that any student is failing to pay attention or is not participating in the class activities, a “unsatisfactory progress” report will be issued and entered into the student’s file. A second such report may lead to probation and/or termination of the student’s enrollment. Any student thus terminated can request an interview with the director of the school to determine his suitability for readmission to class. If readmission is granted student will be awarded the next class position available on the subject(s) needed for graduation assuming that the school’s financial record indicates that the student is paid in full.

School’s Attendance Policy

Instructor will be responsible for entering student’s name in the attendance record at the beginning of class. Any student enrolled in school course who is tardy to class more than three (3) times during the duration of the course will be placed on “probationary status.” Any student who is tardy to class after being put on probation will be marked as “absent” and any subsequent tardiness will be considered cause for termination. Please note that if more than 10% of class time is missed due to absences or tardiness, a student will be terminated and will not graduate with his class. As is school policy, any such student may request an interview with the director of the school and ask for readmission based on a determination of satisfactory commitment to finishing the course requirements without further interruption. Any student so readmitted will be awarded the next available space and may graduate with that class provided that the student’s financial obligations with the school have been met and that he has mastered 80% of the course material.

Any student who becomes sick or ill or has a sickness or death in the family will be given the opportunity to take a leave of absence and rejoin the next scheduled class (dependent upon space availability) and graduate with the new class. Any student who has been granted a leave-of-absence or otherwise experiences a

break in school attendance and is paid-in-full with the school's financial record will be awarded the first open space in class availability and will graduate with this new class.

Per State regulation, a student who is granted a leave-of-absence may be absent for no more than 30 calendar days. School attendance records shall clearly define the dates of the leave-of-absence. A written statement as to why the leave-of-absence was granted, signed by both the student and the school director indicating approval shall be placed in the student's permanent file.

Policy Regarding Student Conduct

Rules of student conduct, recorded at the end, of this booklet will be signed by both student and director. Student conduct rules will be enforced at all times to ensure the safety of students, faculty and school property. Breaking certain rules will be cause for immediate termination while breaking others will result in possible probation. Any student terminated due to non-adherence to the rules may request a review of his actions by the director in order to gain reinstatement in to the school program; if granted, this reinstatement will be to the next available opening in class space, and his/her completion of the course and graduation shall be subject to to the student's financial record with the school and mastery of 80% of the school's course material.

Awarding of Diploma

Each student upon completion of the course will receive their diploma which states that he or she has completed 100 hours of classroom and laboratory study in Refrigeration, Air Conditioning and Heating and has satisfactorily passed the prescribed examinations of proficiency.

Each diploma will be signed by both the course instructor and the school director.

Requirements for Graduation

Students will be required to complete 90% class time in order to graduate with his or her class, whether on a full- or part-time schedule and maintain an 80% or better grade point average on all required tests.

The 90% class time requirement amounts to approximately one (1) day for the full-time course or one (1) week for the part-time course.

Prior to graduation, student shall also be required to have met all financial obligations he has incurred with the school.

Placement Assistance Policy

TechZone HVAC-R school is committed to helping graduates with employment by reaching out to the industry through advertising on the web page and in local newspapers. TechZone will work closely with each graduate to aid in the search for job placement.

Policy Concerning School Tests

Any student who fails to obtain a passing grade on either of the school's tests after his final opportunity to take such test will be terminated from the school's curriculum. Any student so terminated will receive an interview with the school's director to review his progress report. The Director will determine the suitability of the student for readmission in the next available class covering the subjects still needed for graduation dependent on the students fulfillment of financial obligations to the school. If the Director does not grant the student readmission to class, refund will be prorated to correspond with the date of termination.

Student Progress Report

A "Progress Report" will be kept on each student and will be a part of the school's files. Each student will receive a student progress report based on individual testing and participation in hands-on classes. Reports will be distributed to each student on a timely basis at the Director's discretion after each of the school's tests (in week's one (1) and two (2) for full-time students and weeks four (4) and nine (9) for part-time students).

Policies & Procedures to Resolve Student Grievances

Any student who has grievances with the school or instructor may at any time come to the school Director with those complaints, or, if a student has a complaint with a fellow student he or she may also address the director at the school. The Director will address the complaint based on student handbook guidelines and student conduct rules. Any unresolved grievances which cannot be addressed by the Director will be taken by the Director in writing to:

Texas Workforce Commission
Career Schools and Colleges, Room 226T
101 East 15th Street
Austin, Texas 78778-0001
Tel. 512.933.3100

Approved and Regulated by the Texas Workforce Commission, Career Schools and Colleges, Austin, Texas.

The information contained in this catalog is true and correct to the best of my knowledge.

Branton Harden

Branton Harden , Director

Cancellation Policy

A full refund will be made to any student who cancels the enrollment contract within 72 hours (until midnight of the third day excluding Saturdays, Sundays and legal holidays) after the enrollment contract is signed. A full refund will also be made to any student who cancels enrollment within the student's first three scheduled class days, except that the school may retain not more than \$100 in any administrative fees charged, as well as items of extra expense that are necessary for the portion of the program attended and stated separately on the enroll agreement

Refund Policy

1. Refund computations will be based on scheduled course time of class attendance through the last date of attendance. Leaves of absence, suspensions and school holidays will not be counted as part of the scheduled class attendance.
2. The effective date of termination for refund purposes will be the earliest of the following:
 - a. The last date of attendance, if student is terminated by the school;
 - b. The date of receipt of written notice from the student; or
 - c. Ten school days following the last date of attendance
3. If tuition and fees are collected in advance of entrance, and if after expiration of the 72 hour cancellation privilege the student does not enter school, not more than \$100 in any administrative fees charged shall be retained by the school for the entire residence program or synchronous distance education course.
4. If a student enters a residence or synchronous distance education program and withdraws or is otherwise terminated after the cancellation period, the school or college may retain not more than \$100 in any administrative fees charged for the entire program. The minimum refund of the remaining tuition and fees will be the pro rata portion of tuition, fees, and other charges that the number of hours remaining in the portion of the course or program for which the student has been charged after the effective date of termination bears to the total number of hours in the portion of the course or program for which the student has been charged, except that a student may not collect a refund if the student has completed 75 percent or more of the total number of hours in the portion of the program for which the student has been charged on the effective date of termination.¹
5. Refunds for items of extra expense to the student, such as books, tools, or other supplies are to be handled separately from refund of tuition and other academic fees. The student will not be required to purchase instructional supplies, books and tools until such time as these materials are required. Once these materials are purchased, no refund will be made. For full refunds, the school can withhold costs of these types of items from the refund as long as they were necessary for the portion of the program attended and separately stated in the enrollment agreement. Any such items not required for the portion of the program attended must be included in the refund.

¹ More simply, the refund is based on the precise number of course time hours the student has paid for, but not yet used, at the point of termination, up to the 75% completion mark, after which no refund is due. Form PS-1040R provides the precise calculation.

6. A student who withdraws for a reason unrelated to the student's academic status after the 75% completion mark and requests a grade at the time of withdrawal shall be given a grade of incomplete and permitted to re-enroll in the course or program during the 12 month period following the date student withdrew without payment of additional tuition for that portion of the course or program..
7. A full refund of all tuition and fees is due and refundable in each of the following cases:
 - a. enrollee is not accepted by the school;
 - b. if the course of instruction is discontinued by the school and this prevents the student from completing the course; or
 - c.. if the student's enrollment was procured as a result of any misrepresentation in advertising, promotional materials of the school, or representations by the owner or representatives of the school.

A full or partial refund may also be due in other circumstances of program deficiencies or violations of requirements for career schools and colleges.

Refund Policy for Students Called to Active Military Service

- A student of the school or college who withdraws from the school or college as a result of the student being called to active duty in a military service of the United States or the Texas National Guard may elect one of the following options for each program in which the student is enrolled:
- a. If tuition and fees are collected in advance of the withdrawal, a pro-rata refund of any tuition, fees, or other charges paid by the student for the program and a cancellation of any unpaid tuition, fees, or other charges owed by the student for the portion of the program the student does not complete following withdrawal;
 - b. A grade of incomplete with the designation "withdrawn—military" for the courses in the program, other than courses for which the student has previously received a grade on the student's transcript, and the right to re-enroll in the program, or a substantially equivalent program if that program is no longer available, not later than the first anniversary of the date the student is discharged from the active military duty without payment of additional tuition, fees, or other charges for the program other than any previously unpaid balance of the original tuition, fees, and charges for books for the program; or
 - c. The assignment of an appropriate final grade or credit for the courses in the program, but only if the instructor or instructors of the program determine that the student has:
 1. Satisfactorily completed at least 90% of the required coursework for the program; and
 2. Demonstrated sufficient mastery of the program material to receive credit for completing the program.

The payment of refunds will be totally completed such that the refund instrument has been negotiated or credited into the proper account(s), within sixty days after the effective date of termination.



TECH ZONE HVAC SCHOOL

617 EAST SECOND STREET
IRVING, TEXAS 75060
972.579.8822

director@techzonehvacr.com
techzonehvacr.com

EPA 608 TECHNICIAN CERTIFICATION TRAINING

EPA 608 Certification tests will be held during the last week of class or scheduled for a later testing appointment if approved by the instructor. EPA 608 course is taken through VGI or ESCO, depending on proctor availability.

OBJECTIVE

To prepare individual(s) for EPA 608 certification exam so that the person can handle refrigerants according to the rules of the EPA.

EPA CERTIFICATE

Upon passing the EPA core, Type I (Small Appliances), Type II (High Pressure and Very High Pressure Appliances), and Type III (Low Pressure Appliances) sections, students will earn the EPA Section 608 Universal Technician Certification.

The test contains four sections: the Core, and sections I, II, and III. Each section contains twenty-five (25) multiple-choice questions. A technician **MUST** achieve a minimum passing score of 70 percent in each group/section in which they are to be certified. For example, a technician seeking Universal certification must achieve a minimum score of 70 percent, or 18 out of 25 correct, on each section of the test.

If a technician fails one or more of the sections, they may retake the failed section(s) without retaking the section(s) in which they earned a passing score. In the meantime, the technician will be certified in the Type for which they received a passing score. There is one exception; a technician **MUST** achieve a passing score on the Core plus anyone Type to receive any certification.

EPA CERTIFICATION RETAKE COSTS

The cost of the EPA 608 Certification course will be included in the tuition. The class includes the one (1) EPA test and course with a workbook that identifies important areas covered by the test. Each additional test (retesting) will cost \$45.00 administrative fee regardless of whether you take one section or all sections.

TECH ZONE HVAC-R

RULES OF STUDENT CONDUCT

1. No guns, knives or illegal drugs on school property. Violation will result in immediate termination
2. All students will respect each other students space and failing to do so will result in probation.
3. All students will respect school property at all times or probation may result.
4. Fighting of a verbal or physical nature will not be tolerated and will be deemed sufficient cause for immediate termination.
5. Students will obey and respect instructors at all times or be placed on probation.
6. All students will be on time for class or may be placed on probation.
7. No smoking in classrooms and only in designated areas and at specified times on school property. Smoking on campus may result in probation.
8. Cheating will not be tolerated during exams and on school assignments and may result in probation.
9. Stealing of school property or the property of other students will be cause for immediate termination.
10. No talking during exams. You may be placed on probation.
11. Mistreatment of equipment can be dangerous, therefore "horseplay" on school grounds and during school periods will be frowned upon and can be cause for immediate termination.
12. Students will clean up after themselves and maintain an orderly personal space during lab periods and at break times or will be placed on probation.
13. Students will obey and be aware of all safety rules of the school or will be subject to probation.
14. Students will wear all safety apparel and observe all safety protocols when advised or will be subject to probation.
15. Alcohol will not be allowed on school property and alcohol consumption before, during or after class periods is forbidden. Drinking on campus will result in immediate termination
16. Cell phones will be turned off during class. No video or audio recording allowed. Violation will result in probation.

PROFESSIONALISM AND INTEGRITY WILL APPLY AT ALL TIMES

Student

Director

Date