



Specializing in HVAC and Electrical Programs
License #3971



Academic Catalog: Academic Year 2017-2018

Volume 5, Number 6

12490 NE 7th Ave, Suite 205

North Miami, Florida 33161

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Licensed by the Commission for Independent Education, Florida
Department of Education. Additional information regarding this
institution may be obtained by contacting the Commission at
325 West Gaines Street, Suite 1414
Tallahassee, Florida, 32399-0400
Toll free (888) 224-6684

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A MESSAGE FROM THE PRESIDENT

Welcome to Apex Training Center Inc. (ATC) and thank you for giving us the opportunity to assist you in your desire to further your professional aspirations. Competent professionals in the fields of Heating, Air Conditioning, Ventilation Technology, and Electrical are an essential part of life in the South Florida community. We encourage you to take full advantage of our programs and the resources made available to our students.

HISTORY

Apex Training Center was established in the fall of 2008 in order to provide training and employability skills in the growing field of HVAC technology. Stephane Lherisson, the president of ATC started his career as an HVAC technician, and later, in the late 1990's founded a technical school (which included HVAC) in Port-au-Prince, Haiti. He has also been an instructor in other HVAC programs in the Miami area, as well as being an active licensed air conditioning contractor in the state of Florida.

PURPOSE OF THE INSTITUTION

The purpose of the training center is to provide quality theoretical and hands-on practical training, using up-to-date teaching methods and excellence in faculty and facilities.

The learning objectives of the Apex Training Center, Inc. (Apex) programs are to prepare students for employment or advanced training in the Heating, Air-Conditioning, and Refrigeration and Ventilation industry (HVAC). The individual programs that comprise the Apex program prepare students for employment at the following levels: HVAC Helper; HVAC Mechanic Assistant; HVAC Mechanic; HVAC Technician, and Electrician Assistant (as described in the Standard Occupational Classifications: SOC 49-9021).

These programs focus on broad, transferable skills, which emphasize the understanding of the Electrical, Heating, Ventilation and Air-conditioning industry. Students will learn the elements of the industry including: Planning, management, finance, technical and production skills. Additionally, students will develop the knowledge and underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

OWNERSHIP AND GOVERNING BODY

Apex Training Center, Inc. is owned by Stephane Lherisson. Current officers are President: Stephane Lherisson and Vice President Patricia Elias. They serve as the Board of Directors of the corporation.

ADMINISTRATION

President: Stephane Lherisson
Director of Education: Stephane Lherisson
Admissions Coordinator: Fabiah Lherisson
Admissions Administrator: Eunice Pierre

FACULTY

1. Stephane Lherisson

Education:

Award, Master Instructor Club Diamond Award 2009, ATI Career Training Center, Fort Lauderdale, Florida.

Award, Master Instructor Club Diamond Award 2008, ATI Career Training Center, Fort Lauderdale, Florida.

Certificate, (HVAC) New York City Fire Department, NY, New York.

Certificate, (HVAC), Apex Technical School, Ft. Lauderdale, Florida.

Florida Air Conditioning Contractor License # CAC1815545

Associate in Applied Science - Electrical Technology. Queensborough Community College, Queens, New-York.

Bachelor in Science in Electrical Engineering, Florida Atlantic University Boca Raton, Florida

2. Raul Arango

Education:

Florida Journeyman's License

Bachelor Science in Electrical Engineering, Universidad Technologica de Havana, Cuba

3. Arturo Almonacid

Education:

Major Appliance and Refrigeration Technology,
Miami Lakes Education Center

Air Conditioning, Refrigeration, and Heating Technology,
Miami Lakes Educational Center, Florida

CLASS STARTING & ENDING DATES FOR ENROLLMENT

Students may enter into the HVAC program according to the proposed schedule at the end of this Academic Catalog. Students who may have advanced standing, due to previous training and/or experience may be evaluated to be enrolled at other appropriate times, at the determination of the Director of Education Stephane Lherisson.

HOURS OF OPERATION

Mondays to Thursdays: 9:00AM to 6:00PM

Fridays 9:00 AM to 5:00 PM

Saturday (Make up sessions as needed)

Classes will be in session: 7:30 AM to 1:30 PM and 5:00PM to 11:00PM

Library Hours: 9:00AM to 5:00PM Mondays to Fridays

FACILITIES

Apex Training Center, Inc. is conveniently located at 12490 NE 7th Avenue, Suite 205. North Miami, Florida 33161. This 1120 square-foot facility contains two classrooms which can facilitate up to 15 students, a laboratory/shop area and two administrative offices. There is ample parking at the facility and public transportation is readily available.

ADMISSIONS

General Admission Requirements:

1. Admission to ATC is selective and only complete applications are reviewed. A complete application includes the application, application fee or application fee waiver, a copy of a high school diploma or GED. Official high school transcripts for individuals who have graduated within 3 years from the date of application. Prospective students fill out the ATC Admissions application and submit the \$50 non-refundable registration fee.
2. Prospective students are then interviewed by the Admissions Coordinator or his/her designee to determine the interest and applicability the academic program for the prospective student.
3. Applicants will be subject to the following regulations concerning educational qualifications related to the applicant's Ability-to-Benefit from the training provided by the Training Center:
4. All students must be 18 years old or above.
5. An applicant must have completed high school (Diploma) or have proof of having earned a GED or;
6. Students lacking a High School Diploma or GED must successfully pass the Wonderlic Basic Skills Test with a minimum verbal score of 200 and minimum math score of 210 in order to demonstrate Ability-to-Benefit from the programs of training. The Wonderlic WBST is administered by an Independent Test Administrator (ITA), contracted by the school.
7. Applicants will be notified of their admission status upon reception of all completed application materials. Failure to meet the requirements above shall be grounds for denial of admission. Records of those denied admission will be retained by the institution for one year.

GENERAL GRADUATION REQUIREMENTS

Students approaching the end of their program will be required to meet the following exit requirements in order to be awarded a diploma:

1. Students must successfully complete all required courses and related examinations.
2. Students must complete the total number of clock hours required for the program
3. Students must maintain a satisfactory progress report for their program as described under Grading & Satisfactory Academic Progress
4. Students must have fulfilled all monetary obligations to the school.
5. Students who fail to meet the graduation requirements at the time of the program's completion will be required to successfully complete outstanding hours, assignments or examinations at the student's own cost before being awarded a diploma.

GRADING AND SATISFACTORY ACADEMIC PROGRESS

Students are graded during each program of study by the instructor's evaluation of the quality of work presented, and the student's ability to follow instructions. The school maintains a certain amount of flexibility in its testing and in the evaluation of individual students.

Grading Scale

A	90 - 100
B	80 - 89
C	70 - 79
69 or below is unacceptable	

A student is determined to be making Satisfactory Progress who maintains a minimum of **70%** grade point average (GPA) and **67%** attendance for graduation from the student's selected program. A student who fails to maintain a **70%** average during the course of his or her studies will be counseled and assisted to successfully complete the program.

When students fall below the required academic progress standards for their program for two consecutive evaluation periods, students shall receive written notification that they will be withdrawn unless they successfully appeal by written request to the Director of Education. Probation will begin at the start of the next evaluation period. When the grade and the attendance are above the probation ranges, the student will be removed from probation. During the probation period students are considered to be making satisfactory academic progress for academic eligibility.

Academic Advising shall be documented on an academic progress plan and shall be kept in the student's academic file. Exceptions may be made at the Director of Education's discretion.

RULES AND REGULATIONS

Leave of Absence

A student may be granted a leave of absence not to exceed 60 days. A request for a leave of absence must be made in writing and the date of expected return must be specified.

If the student does not re-enter within the specified time, or notify the institution, the student's contract will be terminated and he/she is granted a refund according to the Refund Policy as stated in this Catalog and the Enrollment Agreement (based on the last day of attendance).

Make-up Work

Students who have been absent for any reason are required to make up any missed classes before proceeding to the next program of study. Students must make arrangements with instructors to make up lost training hours. Lost training hours are surcharged at the hourly rate as published in this catalog for their enrolled program for each hour of make-up work.

Tardiness

A student arriving after attendance has been taken is considered late and will be marked absent unless the instructor considers the reason for the tardiness legitimate. All class time missed in excess of fifteen minutes must be made-up by the student prior to graduation.

Attendance

After any unexcused absence, the student is counseled by administration and may be placed on probation. Should the student have another unexcused absence while on probation, the student counseled by administration and at the Director of Education's discretion, may be terminated. Cutting class without prior approval from the instructor or the Director of Education is not permitted and is considered an absence for the entire class period.

Code of Student Conduct

Students are expected to conduct themselves in a professional manner at all times. Foul language, possession of illegal or un-prescribed drugs or alcoholic beverages, and disrespectful behavior is considered unsatisfactory conduct and may be grounds for

dismissal. A student who conducts himself/herself in a manner detrimental to the school, staff, or other students will be terminated. Theft of property from the school or other students is grounds for immediate dismissal.

Interruptions in Training/Termination

A student will not be terminated solely for failure to initially learn the required skills. A student that has not successfully completed the examinations at the end of each program is encouraged to attend additional class sessions for extra practice. The student is permitted to re-take the examinations within a reasonable time as determined by the instructor. If the student fails to achieve a passing grade the second time, he or she is counseled by the Director of Education as to the advisability of continuing. If the student fails the examinations for the third time, he/she will be terminated from their program.

Probation Policy

A student may be placed on probation at the discretion of the Director of Education, prior to completion of the program. Reasons for probation include, but may not be limited to, the following:

- Failure to maintain Satisfactory Progress (not maintaining a minimum 70% GPA or 67% cumulative attendance average);
- Failure to pay tuition and fees under terms agreed upon with Administrator of Apex Training Center, Inc. as reflected in the Enrollment Agreement;
- Failure to comply with rules outlined in the catalog under Code of Conduct and School Policies; or
- Absenteeism while on probation may result in termination from the program.

The probationary period will be for a minimum of one week to a maximum of one month, depending upon the situation, with a maximum of four (4) probationary periods per program. If the student fails to rectify the deficiencies that caused the probation, they will be terminated from the program.

Withdrawals/Termination

A student may voluntarily withdraw from a program by notifying the school verbally or in writing at any point during the program. The stated Refund Policy in this Catalog and the Enrollment Agreement will be followed to determine whether the student is due a refund.

A student who has not successfully completed all examinations by the end of their program is encouraged to attend additional class sessions for extra practice. The student is permitted to re-take the examinations within a reasonable time as determined by the instructor. If the student fails to achieve a passing grade for the second time, he/she will be advised by the Director of Education whether or not to continue the program.

A student may request to transfer to a lesser program instead of withdrawing.

The school may consider a student withdrawn/terminated from a program that does not:

- Maintain Satisfactory Progress in attendance and academics as stated on page 7 of this Catalog;
- Attend classes for 30 consecutive days without notifying the school and obtaining a Leave of Absence;
- Return from a scheduled Leave of Absence by the stated return date, or notify the school of the need for additional time.

Grievance and Appeals Process

The following procedure is in effect for any person who is the recipient of, or who has witnessed, alleged acts of discrimination, violation of privacy or access rights, or other circumstances precipitating a specific complaint, and follows guidelines established by The Commission for Independent Education (CIE).

1. The Director of Education shall be notified, in writing, of the date, time, place and specific act alleged to have occurred. Such notice shall be submitted within 10 days of the alleged act.
2. The Director of Education or his/her designee shall meet with the complainant within ten (10) calendar days from receipt of the written complaint. This meeting will be for the purpose of gathering facts, evaluation and hopeful resolution of the complaint. If the problem cannot be resolved, the complaint will be referred to the school's Complaint Committee. The Complaint Committee is composed of the director and two faculty members. Written documentation of the above mentioned meeting shall be kept in the school's complaint file with a copy provided to the complainant.
3. The Complaint Committee shall meet within twenty-one (21) calendar days of receipt of the complaint to review allegations. If additional information is required from the complainant a written request for said information will be mailed.
4. If additional information is not needed the Complaint Committee shall act on the allegation and a decision shall be rendered, in writing, within fifteen (15) calendar days of the Complaint Committee meeting. The decision shall state the steps taken to correct the problem or information to show that the allegation was not warranted or based on fact. A copy of this decision shall be forwarded to the complainant.
5. The responsible staff member for this procedure is: Mr. Stephane Lherisson, Director of Education.
6. All complainants are required to attempt resolution through the above process.
7. Any student has the right to file a complaint with the Florida Commission for Independent Education if the student has reason to believe their rights under the school's policies regarding privacy, access or non-discrimination have been violated.

In the event any person has followed the school's complaint procedure, but does not feel that an appropriate resolution of the complaint has ensued, such student may contact The Commission for Independent Education (CIE), 325 West Gaines Street, Suite 1414 Tallahassee, Florida 32399-0400; toll-free telephone number (888) 224-6684, in writing to the address indicated above, to request an official complaint form from the organization.

Terms for Reinstatement

An inactive student whether terminated or voluntarily withdrawn may be readmitted to the previously enrolled program under the following conditions:

- Correction of all deficiencies and/or a written agreement with the Director of Education to correct previous deficiencies as described, but not limited to those listed above. The payment of a \$ 100.00 nonrefundable re-entry fee.

STUDENT SERVICES

Employment Placement Services

Students are assisted with placement and furnished names and addresses of employment possibilities. Inquiries made to the school from potential employers will be posted on the bulletin board. The school will assist the student with employment to the best of its ability, but cannot guarantee employment.

EPA Exam Prep & License

ATC offers HVAC students the opportunity to practice, study for, and one free attempt at taking the EPA exam during the course of their program. The EPA (Environmental Protection Agency) license is a vocational certification which is essential for any HVAC professional's career. Students who wish to challenge the exam can do so at an additional cost of \$100.00. The EPA Exam Prep and License is not licensed by the Commission of Independent Education. Disclosure: Students are not required to take this exam as part of their graduation requirements, but is recommended for employment.

OSHA Certification

ATC offers students the optional OSHA 10 Safety Certification in the Construction Industry. The OSHA 10 Certification is a vocational certification is not licensed by the Commission of Independent Education. To successfully complete the requirements of the 10-hour certification, students will need to fully participate in its two day sessions. The session is offered on a quarterly basis. Disclosure: Students are not required to take this exam as part of their graduation requirements.

Career Building Workshops

ATC offers Career Building Workshops once per month to assist students with resume building, job placement and interview skills. Students will have an opportunity to learn professional skills and identify resources which will help them be more competitive on the job market.

Housing

ATC does not maintain housing for students. A list of reliable realtors and rental properties in close proximity to the school will be provided to the student that requests housing assistance at the time of enrollment.

Student Records

Student records are permanently retained by the school in a fire resistant container or a duplicate record shall be kept at a separate location and are available to students upon individual request. Student's records will be provided to potential employers only after a written request has been made by the student.

Miscellaneous Policies

The school provides academic advising services to students. The school does not provide professional counseling or medical services for students.

School Attire: Students are expected to wear their school uniform shirts and ATC issued identification cards with appropriate clothing for the construction industry, including steel toed work boots/shoes. The cost of one uniform shirt is included in the student's tuition. Students may purchase additional uniform shirts for a fee. Personal professional tools and equipment are not included in the student's tuition costs.

PAYMENT OF FEES

- \$50.00 nonrefundable registration fee is due at the time of signing the application for admission.
- \$ 100.00 nonrefundable re-entry fee
- \$ 35.00 Graduation fee
- \$100 EPA Exam

Students enrolling in all Electrical and HVAC programs are required to pay tuition in full prior to attendance of the first class, or to make satisfactory arrangements for payment with the administration prior to attendance for the first class. Payment plans are available from the institution and are part of the enrollment agreement to be signed by all parties.

The fees for each program are printed with the individual program and curriculum listings that follow.

LICENSURE AND ACCREDITATION STATUS

Apex Training Center, Inc. is licensed by the Commission for Independent Education, Florida Department of Education. Apex Training Center, is not accredited by any agency recognized by the US Department of Education.

TRANSFER OF ACADEMIC CREDIT TO/FROM APEX TRAINING CENTER

Acceptance of credit from any institution is at the discretion of the receiving institution. Therefore, no guarantee is made that credits earned at Apex Training Center, Inc. will be accepted for transfer to any other institution. There is also no guarantee that the ATC will accept credits from other institutions. It is the student's responsibility to confirm whether or not credits will be accepted by another institution of the student's choice.

TRANSFERABILITY OF CREDITS

Apex Training Center Inc. has constructed its transfer credit policy to recognize both traditional college and non-traditional learning. In general Apex Training Center Inc. considers the following criteria when determining if the transfer of credits should be awarded:

- Accreditation of the institution
- The comparability of the scope, depth and breadth of the course to be transferred;
- The applicability of the course to be transferred to the student's desired program. This includes the grade and age of the previously earned credit
- If the learning was obtained outside a formal academic setting, through a nationally administered proficiency exam, an IT certificate program, or military training, Apex Training Center Inc. will evaluate and award transfer credits using professional judgement and the recommendations for credits issued by the American Council on Education.

MAXIMUM TRANSFER CREDITS ACCEPTED

Students enrolled in a diploma program must complete at least 25% of the program in residency at the institution awarding the diploma. The remaining 75% of the program may any combination of transfer credit, national proficiency credit, Apex Training Center Inc. developed proficiency credit or prior learning credit.

ANTIDISCRIMINATION POLICY STATEMENT

The school does not discriminate regarding race, color, creed/religion or national origin. The training offered by the school is also recommended to handicapped persons who are unable to undertake strenuous vocations or lack the mobility required by other occupations.

CANCELLATION AND REFUND POLICY FOR ALL PROGRAMS

1. Any monies due the applicant or student shall be refunded within 30 days of official notification of cancellation/withdrawal by electronic mail, Certified Mail, in person or by termination. Official cancellation or withdrawal shall occur the earlier of the dates that:
 - a) All monies will be refunded if the school does not accept the applicant or if the student cancels within three (3) days after signing the enrollment agreement and making an initial payment.
 - b) A student (or in the case of a minor, his/her parent or guardian) cancels his/her contract and demands his/her money back in writing, within three business days of signing the enrollment agreement/contract. All monies paid will be refunded whether or not the student has attended the first class. (Books and materials must be in new condition.)
 - c) A student cancels his/her contract after the third business day, but prior to the first class. In this case the student will be refunded all monies paid, except the non-refundable registration fee (not to exceed \$150.00) and the books and material fee. (The books and materials fee will be refunded if they are returned to the school in new condition).
 - d) A student notifies the institution of his/her withdrawal. In this case, the refund will be computed based on the schedule of tuition adjustment below.
 - e) A student on an approved leave of absence notifies the school that he or she will not be returning. The date of withdrawal shall be the earlier of the date of expiration of the leave of absence or the date the student notifies the school they will not be returning. In this case, the refund will be computed based on the schedule of tuition adjustment below.
 - f) A student is expelled by the school.
 - g) In type b, c, d or e official cancellations or withdrawals, the cancellation/termination date will be determined by the postmark on written notification, or the date the information is delivered in person to the Admissions Coordinator or other administrative personnel.
 - h) When calculating the refund due to a student, the last day of actual attendance by the student is used in the calculation unless earlier written notice was received.
2. Any monies due to a student who unofficially or officially withdraws from the institution shall be refunded within 30 days of a determination by the institution that the student has withdrawn without notifying the institution. To determine unofficial withdrawals, the school monitors student attendance at a minimum of once a month. NOTE: Absence from class for 30 consecutive days without notification to the school, unsatisfactory progress, non-payment of tuition and fees, or failure to comply with stated rules in this Catalog, will be considered “unofficial withdrawal.”

3. When situations of mitigating circumstances are in evidence, the school may re-evaluate the refund policy wherein a student's refund may exceed the norm.
4. Books and materials are non-refundable items, except as stated above.
5. Program Cancellation Policy: If a program or course is canceled subsequent to a student's enrollment, and before instruction in the program or course has begun, the school shall, at its option: (a.) Provide a full refund of all monies paid; (b.) Provide alternative completion of the program or course; or (c.) Apply funds to another course or program offered at this school and refund any extra funds to the student.
6. Cancellation after attendance has begun but prior to 40% completion of the program will result in a Pro Rata (pro-rated) refund computed on the number of hours completed to the total program hours. NOTE: No refunds will be given if cancellation occurs after 40% completion of the program.
7. In the event that the institution ceases to operate as a school, a train-out agreement is on file with the Commission for Independent Education in Tallahassee per Florida State Statute.

EDUCATIONAL PROGRAMS AND CURRICULA

Course Numbering System

Prefixes and numbers reflect the scope and sequence of each course and its program:

HVAC 100 series= HVAC Helper level
HVAC 200 series= HVAC Mechanic Assistant level
HVAC 300 series= HVAC Mechanic level
HVAC 400 series= HVAC Technician level

The numbering system indicates the general sequence in which topics are studied. Most of the courses have specific prerequisites, although some courses may be taken out of sequence with the permission of the instructor and/or Director of Education.

Definition of Instructional Clock Hour

Clock hour means a period of 60 minutes with a minimum of 50 minutes of instruction in the presence of an instructor

CURRICULUM

Curriculum Development

All curriculum courses are developed and reviewed by the faculty in accordance with the Florida Department of Education Curriculum Frameworks and the Standard Occupational Classifications: SOC 49-9021 published by the US Department of Labor Statistics.

All courses are developed to reflect an appropriate relationship between theory and laboratory/shop learning experiences.

ELECTRICIAN ASSISTANT

Program Outline

Course #	Course Title	Theory Hours	Lab Hours	Total Clock Hours
ELEC 100	Electrical Theory	60	20	80
ELEC 200	NEC / Safety / Hands Tools and Conduit Bending	40	40	80
ELEC 202	Residential / Commercial and NEC Requirements	40	40	80
ELEC 300	Transformer Principles and Test Equipment	40	40	80
ELEC 302	Power Distribution	60	20	80
ELEC 204	Hazardous Locations & Renewable Energy	60	20	80
ELEC 102	Motor Concepts	40	40	80
ELEC 206	Advance Industrial controls	40	40	80
ELEC 206	Solid State Controls and Industrial Automation	40	40	80
	Total Program Clock Hours	420	280	720

Program Description and Objectives:

The commercial and residential electrical industries are constantly evolving as new industry demands require increased skill sets for electricians. Graduates need the necessary core and specialty skills to successfully meet electrician standards and be embraced by the marketplace. Through the Electrician diploma program, students will learn skill of electrical safety, tools and theory, the National Electrical Code (NEC), conduit bending, residential and commercial wiring, power distribution, advanced code concepts and motors, industrial controls, Programmable Logic Controllers (PLCs), personal

development, jobsite management, fire and security alarms, voice, data, TV, signaling systems and fiber optics. Laboratory experience is an integral part of the program.

Graduates of the Electrician diploma program are qualified for entry-level or trainee positions with employers of commercial and residential electricians, preventive maintenance electricians, production electricians, bench electricians, repair electricians, industrial maintenance electricians, programming electricians, maintenance technicians, field service electricians, installation electricians, and any manufacturing industry or market sector employer that has a need for electricians. Upon successful completion of all program modules, students will be awarded a diploma.

(This program satisfies the requirements of FDOE Curriculum Frameworks I470203: 01.0 to 10.0) (SOC 49-9021)

Estimated Length of Study:

This program consists of 720 clock hours of training, accomplished over the course of 9 months. Students will attend class four days per week, five hours per day.

Program Costs:

Enrollment and Registration Fee (nonrefundable):	\$50.00
Tuition (250 hours computed at \$17 per hour)	\$8250.00
Estimated books, tools and equipment	<u>\$500.00</u>
Estimated Total Program Cost	\$8800.00

HVAC HELPER

Program Outline

Course #	Course Title	Theory Hours	Lab Hours	Total Clock Hours
HVAC 110	General Safety Policies and Procedures for HVAC	25	15	40
HVAC 112	An Introductory Overview of HVAC	50	10	60
HVAC 114	Introduction to HVAC Systems and Theory	60	20	80
HVAC 116	Entrepreneurship in the HVAC Industry	30	10	40
HVAC 118	Communication, Computer and Employability Skills	15	15	30
	Total Program Clock Hours	180	70	250

Program Description and Objectives:

The 250 clock hour HVAC Helper program is designed to introduce students to safety standards and working conditions in the Heating, Ventilation, and Air-Conditioning industry. (This program satisfies the requirements of FDOE Curriculum Frameworks I470203: 01.0 to 10.0) (SOC 49-9021)

Students will:

- 01.0 Identify safe working conditions and follow safety practices.
- 02.0 Describe the history and concepts of heating, air-conditioning, and refrigeration.
- 03.0 Identify, use, and maintain the hand tools and tool accessories used in the heating, air-conditioning, and refrigeration industry.
- 04.0 Demonstrate an understanding of matter and heat behavior.
- 05.0 Demonstrate a working knowledge of fluids, pressures, refrigerants, and related codes.
- 06.0 Fabricate and service the piping, tubing, and fittings used in the heating, air-conditioning, and refrigeration industry.
- 07.0 Demonstrate a working knowledge of heating, air-conditioning, and refrigeration system components and accessories.
- 08.0 Apply appropriate communication and computer skills.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate employability skills.

Estimated Length of Study:

This program consists of 250 clock hours of training, accomplished over the course of 10.4 weeks. Students will attend class four days per week, 6 hours per day.

Program Costs (HVAC Helper):

Enrollment and Registration Fee (nonrefundable):	\$50.00
Tuition (250 hours computed at \$17 per hour)	\$4250.00
Estimated books, tools and equipment	<u>\$500.00</u>
 Estimated Total Program Cost	 \$4800.00

HVAC MECHANIC ASSISTANT

Program Outline

Course #	Course Title	Theory Hours	Lab Hours	Total Clock Hours
HVAC 110	General Safety Policies and Procedures for HVAC	25	15	40
HVAC 112	An Introductory Overview of HVAC	50	10	60
HVAC 114	Introduction to HVAC Systems and Theory	60	20	80
HVAC 116	Entrepreneurship in the HVAC Industry	30	10	40
HVAC 118	Communication, Computer and Employability Skills	15	15	30
HVAC 210	Principles of Application of Electricity in HVAC	25	5	30
HVAC 212	Understanding and Utilizing Wiring and Schematics	20	10	30
HVAC 214	Codes, Standards and Basic Electrical Troubleshooting	30	10	40
HVAC 216	HVAC Control Mechanics and Electrical Motors	25	15	40
HVAC 218	Installation of Residential HVAC	25	15	40
HVAC 220	HVAC Systems Operation, Check-Out and Startup	25	15	40
HVAC 222	HVAC Piping and Sizing	20	10	30
	Total Program Clock Hours	350	150	500

Program Description and Objectives:

The 500 clock hour HVAC Mechanic Assistant program is designed for students to acquire an intermediate knowledge of safety standards and working conditions in the Heating, Ventilation, and Air-Conditioning industry. (This program satisfies the requirements of FDOE Curriculum Frameworks I470203: 01.0 to 16.0) (SOC 49-9021)

Students will:

- 01.0 Identify safe working conditions and follow safety practices.
- 02.0 Describe the history and concepts of heating, air-conditioning, and refrigeration.

- 03.0 Identify, use, and maintain the hand tools and tool accessories used in the heating, air-conditioning, and refrigeration industry.
- 04.0 Demonstrate an understanding of matter and heat behavior.
- 05.0 Demonstrate a working knowledge of fluids, pressures, refrigerants, and related codes.
- 06.0 Fabricate and service the piping, tubing, and fittings used in the heating, air-conditioning, and refrigeration industry.
- 07.0 Demonstrate a working knowledge of heating, air-conditioning, and refrigeration system components and accessories.
- 08.0 Apply appropriate communication and computer skills.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate employability skills.
- 11.0 Demonstrate a practical knowledge of basic electricity and of the electrical components of heating, air-conditioning, and refrigeration equipment.
- 12.0 Troubleshoot heating, air-conditioning, and refrigeration electrical control systems and their components.
- 13.0 Troubleshoot and wire electrical motors and their components.
- 14.0 Assist in the installation of a residential heating and air-conditioning system and determine start-up procedures.
- 15.0 Demonstrate a working knowledge of mechanical heating and air-conditioning system operations and of start-up and checkout procedures.
- 16.0 Identify basic principles for heating, air conditioning, refrigeration and ventilation piping and sizing.

Estimated Length of Study:

This program consists of 500 clock hours of training, accomplished over the course of 21 weeks (Approx. 6 months). Students will attend class four days per week, 6 hours per day.

Program Costs (HVAC Mechanic Assistant):

Enrollment and Registration Fee (nonrefundable):	\$50.00
Tuition (500 hours computed at \$15 per hour)	\$7500.00
Estimated books, tools and equipment	<u>\$500.00</u>
Estimated Total Program Cost	\$8050.00

HVAC MECHANIC

Program Outline

Course #	Course Title	Theory Hours	Lab Hours	Total Clock Hours
HVAC 110	General Safety Policies and Procedures for HVAC	25	15	40
HVAC 112	An Introductory Overview of HVAC	50	10	60
HVAC 114	Introduction to HVAC Systems and Theory	60	20	80
HVAC 116	Entrepreneurship in the HVAC Industry	30	10	40
HVAC 118	Communication, Computer and Employability Skills	15	15	30
HVAC 210	Principles of Application of Electricity in HVAC	25	5	30
HVAC 212	Understanding and Utilizing Wiring and Schematics	20	10	30
HVAC 214	Codes, Standards and Basic Electrical Troubleshooting	30	10	40
HVAC 216	HVAC Control Mechanics and Electrical Motors	25	15	40
HVAC 218	Installation of Residential HVAC	25	15	40
HVAC 220	HVAC Systems Operation, Check-Out and Startup	25	15	40
HVAC 222	HVAC Piping and Sizing	20	10	30
HVAC 310	Solid State Electronics and HVAC Systems	60	20	80
HVAC 312	HVAC Testing Equipment: Refrigeration and Combustion	60	30	90
HVAC 314	Troubleshooting Gas Valves and Regulators in HVAC	50	30	80
HVAC 316	Properties of Air and Indoor Air Quality	50	20	70
HVAC 318	Diagramming Refrigerant Cycles: Enthalpy Charting	40	20	60
HVAC 320	Installation, Maintenance and Repair of HVAC Systems	80	40	120
	Total Program Clock Hours	690	310	1000

Program Description and Objectives:

The 1000 clock hour HVAC Mechanic program is designed for students to acquire advanced knowledge of safety standards and working conditions in the Heating, Ventilation, and Air-Conditioning industry. (This program satisfies the requirements of FDOE Curriculum Frameworks I470203: 01.0 to 24.0) (SOC 49-9021)

Students will:

- 01.0 Identify safe working conditions and follow safety practices.
- 02.0 Describe the history and concepts of heating, air-conditioning, and refrigeration.
- 03.0 Identify, use, and maintain the hand tools and tool accessories used in the heating, air-conditioning, and refrigeration industry.
- 04.0 Demonstrate an understanding of matter and heat behavior.
- 05.0 Demonstrate a working knowledge of fluids, pressures, refrigerants, and related codes.
- 06.0 Fabricate and service the piping, tubing, and fittings used in the heating, air-conditioning, and refrigeration industry.

- 07.0 Demonstrate a working knowledge of heating, air-conditioning, and refrigeration system components and accessories.
- 08.0 Apply appropriate communication and computer skills.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate employability skills.
- 11.0 Demonstrate a practical knowledge of basic electricity and of the electrical components of heating, air-conditioning, and refrigeration equipment.
- 12.0 Troubleshoot heating, air-conditioning, and refrigeration electrical control systems and their components.
- 13.0 Troubleshoot and wire electrical motors and their components.
- 14.0 Assist in the installation of a residential heating and air-conditioning system and determine start-up procedures.
- 15.0 Demonstrate a working knowledge of mechanical heating and air-conditioning system operations and of start-up and checkout procedures.
- 16.0 Identify basic principles for heating, air conditioning, refrigeration and ventilation piping and sizing.
- 17.0 Demonstrate a practical knowledge of solid-state electronics as used in heating, air-conditioning, and refrigeration systems.
- 18.0 Utilize and operate mechanical refrigeration servicing and testing equipment.
- 19.0 Use combustion-type heating servicing and testing equipment.
- 20.0 Troubleshoot combustion gas valves and regulators as used in heating, air-conditioning, refrigeration and ventilation systems.
- 21.0 Determine the properties of air.
- 22.0 Use a pressure enthalpy chart to diagram refrigerant cycles.
- 23.0 Explain the standards for and ways to measure indoor-air quality.
- 24.0 Demonstrate the installation, maintenance, and repair of heating, air-conditioning, and refrigeration systems.

Estimated Length of Study:

This program consists of 1000 clock hours of training, accomplished over the course of 41.5 weeks (10 months). Students will attend class four days per week, for 6 hours each day.

Program Costs (HVAC Mechanic):

Enrollment and Registration Fee (nonrefundable):	\$50.00
Tuition (1000 hours computed at \$12 per hour)	\$12000.00
Estimated books, tools and equipment	<u>\$500.00</u>
Estimated Total Program Cost	\$ 12550.00

HVAC TECHNICIAN

Program Outline

Course #	Course Title	Theory Hours	Lab Hours	Total Clock Hours
HVAC 110	General Safety Policies and Procedures for HVAC	25	15	40
HVAC 112	An Introductory Overview of HVAC	50	10	60
HVAC 114	Introduction to HVAC Systems and Theory	60	20	80
HVAC 116	Entrepreneurship in the HVAC Industry	25	15	40
HVAC 118	Communication, Computer and Employability Skills	15	15	30
HVAC 210	Principles of Application of Electricity in HVAC	25	5	30
HVAC 212	Understanding and Utilizing Wiring and Schematics	20	10	30
HVAC 214	Codes, Standards and Basic Electrical Troubleshooting	30	10	40
HVAC 216	HVAC Control Mechanics and Electrical Motors	25	15	40
HVAC 218	Installation of Residential HVAC	25	15	40
HVAC 220	HVAC Systems Operation, Check-Out and Startup	25	15	40
HVAC 222	HVAC Piping and Sizing	20	10	30
HVAC 310	Solid State Electronics and HVAC Systems	60	20	80
HVAC 312	HVAC Testing Equipment: Refrigeration and Combustion	60	30	90
HVAC 314	Troubleshooting Gas Valves and Regulators in HVAC	50	30	80
HVAC 316	Properties of Air and Indoor Air Quality	50	20	70
HVAC 318	Diagramming Refrigerant Cycles: Enthalpy Charting	40	20	60
HVAC 320	Installation, Maintenance and Repair of HVAC Systems	80	40	120
HVAC 410	Understanding and Maintenance, Testing and Troubleshooting of Electrical Generation Components of Commercial HVAC Systems	10	40	50
HVAC 412	Understanding and Maintenance, Testing and Troubleshooting Pneumatic and other Environmental Control Systems for HVAC	15	40	55
HVAC 414	Understanding and Maintenance, Testing and Troubleshooting Electrical Circuits used in Commercial HVAC Systems	20	40	60
HVAC 416	Understanding, Maintenance, Testing and Troubleshooting Commercial Compressors, Evaporative Condensers and Evaporators	10	35	45
HVAC 418	Maintenance, Testing and Adjustment of Commercial HVAC Accessories	10	20	30
HVAC 420	Maintenance, Troubleshooting and Repair of Commercial Heating Systems	35	75	110
	Total Program Clock Hours	785	565	1350

Program Description and Objectives:

The 1350 clock hour HVAC Technician program is designed for students to acquire a high level of the theory and practice of safety standards and working conditions in the Heating, Ventilation, and Air-Conditioning industry. (This program satisfies the requirements of FDOE Curriculum Frameworks I470203: 01.0 to 37.0) (SOC 49-9021)

Students will:

- 01.0 Identify safe working conditions and follow safety practices.
- 02.0 Describe the history and concepts of heating, air-conditioning, and refrigeration.
- 03.0 Identify, use, and maintain the hand tools and tool accessories used in the heating, air-conditioning, and refrigeration industry.
- 04.0 Demonstrate an understanding of matter and heat behavior.
- 05.0 Demonstrate a working knowledge of fluids, pressures, refrigerants, and related codes.
- 06.0 Fabricate and service the piping, tubing, and fittings used in the heating, air-conditioning, and refrigeration industry.
- 07.0 Demonstrate a working knowledge of heating, air-conditioning, and refrigeration system components and accessories.
- 08.0 Apply appropriate communication and computer skills.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate employability skills.
- 11.0 Demonstrate a practical knowledge of basic electricity and of the electrical components of heating, air-conditioning, and refrigeration equipment.
- 12.0 Troubleshoot heating, air-conditioning, and refrigeration electrical control systems and their components.
- 13.0 Troubleshoot and wire electrical motors and their components.
- 14.0 Assist in the installation of a residential heating and air-conditioning system and determine start-up procedures.
- 15.0 Demonstrate a working knowledge of mechanical heating and air-conditioning system operations and of start-up and checkout procedures.
- 16.0 Identify basic principles for heating, air conditioning, refrigeration and ventilation piping and sizing.
- 17.0 Demonstrate a practical knowledge of solid-state electronics as used in heating, air-conditioning, and refrigeration systems.
- 18.0 Utilize and operate mechanical refrigeration servicing and testing equipment.
- 19.0 Use combustion-type heating servicing and testing equipment.
- 20.0 Troubleshoot combustion gas valves and regulators as used in heating, air-conditioning, refrigeration and ventilation systems.
- 21.0 Determine the properties of air.
- 22.0 Use a pressure enthalpy chart to diagram refrigerant cycles.
- 23.0 Explain the standards for and ways to measure indoor-air quality.

- 24.0 Demonstrate the installation, maintenance, and repair of heating, air-conditioning, and refrigeration systems.
- 25.0 Demonstrate a working knowledge of electrical generation and distribution components for commercial heating and air conditioning systems.
- 26.0 Maintain, test, and troubleshoot electrical motors and their components for commercial heating and air-conditioning systems.
- 27.0 Demonstrate a working knowledge of environmental control systems as used in commercial heating and air-conditioning systems.
- 28.0 Maintain and troubleshoot pneumatic control systems for commercial heating and air-conditioning applications.
- 29.0 Troubleshoot electrical circuits as used in commercial heating and air-conditioning systems.
- 30.0 Select appropriate commercial compressors.
- 31.0 Test and adjust commercial evaporative condensers.
- 32.0 Maintain, test, and troubleshoot commercial evaporators.
- 33.0 Maintain, test, and adjust commercial heating and air-conditioning accessories.
- 34.0 Maintain, troubleshoot, and repair commercial heating systems.
- 35.0 Maintain and repair thermal storage systems.
- 36.0 Maintain, troubleshoot, and repair commercial heating and air-conditioning systems.
- 37.0 Calculate commercial heating and air-conditioning loads.

Estimated Length of Study:

This program consists of 1350 clock hours of training, accomplished over the course of 67 weeks (approximately 15 months). Students will attend class five days per week, for four hours each day.

Program Costs (HVAC TECHNICIAN):

Enrollment and Registration Fee (nonrefundable):	\$50.00
Tuition (1350 hours computed at \$10 per hour)	\$13500.00
Estimated books, tools and equipment	<u>\$500.00</u>
Estimated Total Program Cost	\$ 14050.00

COURSE DESCRIPTIONS FOR HVAC PROGRAMS

HVAC 110 General Safety Practices and Procedures for HVAC 40 clock hours
(25 theory, 15 lab)

Course Description: This course covers the basic safety consideration for persons in the HVAC industry. Presentation and course work cover: hazard communication (labels and MSDS); personal protective equipment (PPE); personal safety and confined space and ladders; electrical lockout/tag out; fire extinguishers; compressed gas safety; back protection; and HVAC hazardous materials. Students will be expected to identify and follow safety practices as presented in this course.

HVAC 112 An Introductory Overview of HVAC 60 clock hours
(50 theory, 10 lab)

Course Description: In this course students will be introduced to the history and concepts of HVAC and be instructed in the identity, use and maintenance of hand tools and tool accessories used in the HVAC industry. Also included in this course is an overview of the HVAC industry and its component parts.

HVAC 114 Introduction to HVAC Systems and Theory 80 clock hours
(60 theory, 20 lab)

Course Description: This course will instruct students in interaction of matter and heat. Also covered will be the topics of fluids, pressures, refrigerants, and related codes. Students will demonstrate a working knowledge of elementary HVAC by fabricating and servicing piping tubing and fittings used in the industry. They will also demonstrate a working knowledge of HVAC by participating in laboratory exercises as assigned by the instructor.

HVAC 116 Entrepreneurship in the HVAC Industry 40 clock hours
(25 theory, 15 lab)

Course Description:

Upon successful completion of this course, the student will be able to define business ownership and its relationship to the economy. The student will be instructed on the advantages and disadvantages of business ownership versus working for others. The risks and opportunities of business ownership will a focus of this course. Students will be instructed in the licensure requirements of local and state regulatory agencies.

HVAC 118 Communication, Computer and Employability Skills 30 clock hours
(15 theory, 15 lab)

Course Description: In this course students will be introduced to basic communication skills. These skills will be explored at length: interpersonal communication (conversation); professional communication; and written communication involving the proper use of the English language. The computer laboratory will be the setting for many of the learning activities which are directed to gaining essential employment skills.

HVAC 210 Principles of Application of Electricity in HVAC 30 clock hours
(25 theory, 5 lab)

Course Description: This course will introduce the student to the principles of electricity. Knowledge of single- and three-phase power distribution as well as the definition and understanding of terms such as watts, ohms, volts, and amps will be emphasized. Students will also learn to identify and explain electrical measuring tools and devices. The standards and means of measuring watts, resistance, voltage, amperage using the appropriate instruments will be taught in this course.

HVAC 212 Understanding in Utilizing Wiring and Schematics 30 clock hours
(20 theory, 10 lab)

Course Description: In this course students will be instructed in the identity and explanation of appropriate electrical wiring symbols. They will learn to draw and explain the wiring schematic diagram for a control system. In the process they will create a wiring schematic for each of several HVAC components using symbols for safe and effective operation and interpretation.

HVAC 214 Codes, Standards and Basic Electrical Troubleshooting 40 clock hours
(30 theory, 10 lab)

Course Description: This course will assist the student in gaining an understanding of codes, standards and safety requirements for working with electrical components used in HVAC. They will be instructed in troubleshooting protection devices such as fuses and breakers. Students will also learn to interpret tables and charts from the National Electrical Codes (NEC).

HVAC 216 HVAC Control Mechanics and Electrical Motors 40 clock hours
(25 theory, 15 lab)

Course Description: In this course students will be taught to identify and explain the operations of electrical control systems and their components. They will learn to identify, install and troubleshoot various controls for HVAC systems. Students will also be able to explain the operation of different types of electromechanical thermostats. In the laboratory exercises which are a part of this course, students will be introduced to the wiring of basic heating, air conditioning, and refrigeration systems. They will also troubleshoot basic operational problems for different types of electro-mechanical thermostats. Additionally, students will also be instructed in the electrical mechanical operations of the basic heat pump.

HVAC 218 Installation of Residential HVAC 40 clock hours
(25 theory, 15 lab)

Course Description: This course is a practical application of material already presented as a part of this program. In addition to the knowledge already gained students will be instructed in the proper manner to read and comply with dispatch be able understand and explain local codes and ordinances. Students will learn to select and use appropriate tools and safety practices of the test equipment. They will learn to assist in the installation of heating and air-conditioning system to the manufacturer's specifications for installation and operational. They will gain a practical knowledge of duct fabrication methods. As a part of the knowledge gained in this class, students will also learn the proper charge of residential air-conditioning units and adjust superheat. They will be able to determine the temperature drop across the evaporator and determine the temperature rise across the condenser. As a part of the laboratory portion of the course, students will write service reports and practice good customer relations skills.

HVAC 220 HVAC Systems Operation, Check out and Start up 40 clock hours
(25 theory, 15 lab)

Course Description: This course will instruct students in identifying and being able to explain various heat pump systems. They will learn the start up in checkout procedures recommended by manufacturers. They will be taught to determine the electrical requirements of the equipment, selecting the appropriate tools and instruments, following good safety precautions. Students will be instructed in determining the temperature changes in various heat pump systems. They will learn about how to test for proper refrigerant charge in residential heat pumps. They will continue to expand customer relation skills.

HVAC 222 HVAC Piping and Sizing 30 clock hours
(20 theory, 10 lab)

Course Description: Upon completion of this course the student will be able to identify and explain various types of HVAC piping and sizing. The student will apply basic principles of proper sizing for various HVAC sizing and piping tasks associated with the industry. Students will be able to explain pressure and temperature drops associated with piping and sizing.

HVAC 310 Solid State Electronics and HVAC Systems 80 clock hours
(60 theory, 20 lab)

Course Description: Students will learn the basic principles and functions of direct Digital controls (DDC). They will be able to explain basic solid State circuits and boards as well as being able to identify test and replace circuits and boards. They will be instructed in the functions of a building-management system. They will learn to program a programmable thermostat.

HVAC 312 HVAC Testing Equipment: Refrigeration and Combustion 90 clock hours
(60 theory, 30 lab)

Course Description: This course will instruct students in how to use and operate testing equipment. Safety will be emphasized, with special attention being given to combustion type heating services. Students will learn to identify and explain the functions of servicing and testing equipment as well as being able to operate a refrigerant recovery system. Students will explain the standards for and ways to measure task, maintain, and evacuate a mechanical heating, air conditioning, and refrigeration system as well as evacuating refrigerant system with various vacuum methods. Students will be instructed in combustion theory and be able to install a combustion type heating unit to manufacture and code requirements. This course will be a combination of theory and direct application in the laboratory setting.

HVAC 314 Troubleshooting Gas Valves and Regulators in HVAC 80 clock hours
(50 theory, 30 lab)

Course Description: Instructors will identify and discuss with the student safety regulation issues related to gas valves and regulators as used in the HVAC industry. Students will be instructed in the operation of various types of gas valves and regulators, such as low-voltage, line-voltage, pneumatic, solenoid, and gas pressure regulators. Students will be able to determine the application of/and troubleshoot gas valves and regulators.

HVAC 316 Properties of Air and Indoor Air Quality 70 clock hours
(50 theory, 20 lab)

Course Description: The purpose of this course is to introduce students to the principles of psychometrics enabling them to identify and explain the components and uses of the psychometric meter. They will be able to identify the properties of air, using a psychometric chart. Following safety precautions, they will fabricate, operate, maintain, and troubleshoot air filtration systems, air handling systems, and ventilation systems. The student will be able to define indoor air quality as well as to identify and explain the codes and standards regarding air quality. They will be able to selecting and use indoor air quality measuring devices and explain the standards for and the ways to measure it using various methods.

HVAC 318 Diagramming Refrigerant Cycles: Enthalpy Charting 60 clock hours
(40 theory, 20 lab)

Course Description: This course is designed to instruct the student in the theoretical and practical basis of the refrigerant cycles. Upon completion of this class students will be able to identify all components of the pressure enthalpy chart; clearly defining both "enthalpy" and "entropy." The student will do extensive work designing enthalpy charting and applying it to the theory and application of refrigeration.

HVAC 320 Installation, Maintenance and Repair of HVAC Systems 120 clock hours
(80 theory, 40 lab)

Course Description: This course is designed to instruct students in the installation, maintenance, and repair of HVAC systems. The student will be able to describe new technologies in HVAC including: variable speed motors heat pipe systems desiccant systems gas driven heating systems. The student will be instructed in applying local and national codes in the layout, construction, and troubleshooting of comfort systems. They will then be able to test and analyze the systems they have constructed as well as testing and analyzing heat recovery systems that are part of this course.

HVAC 410 Understanding, Maintenance and 50 clock hours
Troubleshooting Electrical Generation
Components of Commercial HVAC Systems

(10 theory, 40 lab)

Course Description: The objective of this course is to provide students with a working knowledge of electrical generation and the distribution components for commercial HVAC systems. Students will be learning to determine wire sizes and voltage drops, as well as to identify power-transformer types. They will test, size, and replace protection devices such as fuses and breakers, motor starters, and overloads. As a part of this course they will have hands-on experience maintaining, testing and troubleshooting various types of commercial electrical motors and components is used in commercial HVAC systems. They will be able to demonstrate the proper use of motor testing equipment.

HVAC 412 Understanding, Maintenance, Testing and 55 clock hours
Troubleshooting Pneumatic and other
Environmental Control Systems for HVAC

(15 theory, 40 lab)

Course Description: The purpose of this course is for the student to develop a working knowledge of environmental control systems used in HVAC including Pneumatic control systems. Students will be able to identify and explain the various types of environmental control systems and their sequences of operation as used in commercial heating and air-conditioning systems. They will learn to maintain, test, and troubleshoot various types of control systems as used in commercial HVAC.

HVAC 414 Understanding, Maintenance, Testing and 60 clock hours
Troubleshooting Electrical Circuits used in
Commercial HVAC Systems

(20 theory, 40 lab)

Course Description: This course instructs students in the principles of designing an electrical system for residential HVAC systems. Additionally, students are provided the opportunity to apply these principles in commercial systems. Students will be able to define and compare single and multiphase voltage, as well as the current related to commercial heating and air-conditioning systems. They will learn to calculate various circuit loads in commercial heating and air-conditioning application, using Ohm's law. They will learn to calculate the electrical circuit loads using commercial heating and air conditioning applications, as well as troubleshooting electrical circuits for commercial heating and air-conditioning systems.

HVAC 416 Understanding, Maintenance, Testing and 45 clock hours
Troubleshooting Commercial Compressors,
Evaporative Condensers and Evaporators

(10 theory, 35 lab)

Course Description: The purpose of this course is for the students to gain knowledge regarding commercial compressors, evaporative condensers and evaporators. They will learn to select the appropriate condenser, compressor and/or evaporator for commercial use. They will learn to maintain, test and troubleshoot these types of equipment. They will be able to test and adjust evaporative condensers to determine the proper air and fluid flow in commercial application. They will be able to adjust for proper airflow, water flow and temperature.

HVAC 418 Maintenance, Testing and Adjustment of Commercial 30 clock hours
HVAC Systems

(10 theory, 20 lab)

Course Description: Students will be instructed to compare commercial accessories such as residential and light commercial heating and air conditioning accessories. They will also learn to select appropriate accessories for various commercial applications. They will also practice the maintenance, testing and adjustment of commercial HVAC accessories.

**HVAC 420 Maintenance, Troubleshooting and Repair
of Commercial HVAC/Heating Systems**

110 clock hours

(35 theory, 75 lab)

Course Description: This course is designed to bring the elements of instruction in all of the previous HVAC coursework together into a practical and intensive learning experience. This course will review and practice the elements learned to this point. Special emphasis will be made on heating systems. Students will apply local and national codes as well as safety practices. They will keep records of the installation maintenance and repair of commercial HVAC systems, identifying the components of each. Students will be able to explain the principles of various commercial systems. They will test and analyze heating air distribution systems as well as maintaining troubleshooting and repairing various commercial applications such as gas furnaces and boilers, oil furnaces and boilers, electric furnaces, electric heaters, heat pumps and solar heating systems. Students will also learn to maintain and repair thermal storage systems; keeping appropriate records maintaining safety practices and applying national and local codes. Students will also be taught how calculation of commercial heating and air-conditioning loads is accomplished. They will be able to explain conduction as a heat-loads source while describing the implications of conduction and the resistance values for different types of construction materials. The extensive laboratory/shop experience will focus on applying the knowledge and performance of the skills over the entire HVAC Technician Program.

STUDENT FINANCIAL ASSISTANCE

Apex Training Center offers its students the opportunity to meet the financial obligations of the institution through various avenues. ATC offers financing for all its programs and financial assistance is available to those who qualify.

Scholarships and Disclosure:

At ATC, we encourage our students to apply for additional sources of funding which include community and privately funded scholarships. Students who are awarded said scholarships will need to abide by and honor the conditions set forth by the awarding source. Apex Training Center will accept a scholarship award to fund a student's program if the students understand and abides by the conditions set forth by ATC. These conditions are as follows:

1. A student who is awarded a scholarship enters into an agreement solely between the student and the awarding source.
2. It is the student's responsibility to abide by and honor the terms and agreements of the scholarship set forth by the awarding source.
3. If the student does not satisfactorily complete the course which he/she is enrolled in, the student will forthwith refund to Apex Training Center the pro-rata unused portion of the tuition.
4. The student will be liable to pay for the outstanding cost of the program if at any point, the scholarship is revoked or cancelled.
5. The student will complete all work, hours and training assignments by the required deadlines to be awarded a diploma even if the program has been paid in full.
6. The student understands that he/she will be contacted if he/she fails to uphold the above responsibilities. The contact will be documented and include the type of activity that has been considered unacceptable and will specify the consequences that may result in loss of his/ her scholarship.

Student Signature

School Official Signature

Print Full Name

Print Full Name

Date

Date