

# Student Handbook



**IBEW Local 98 - Philadelphia, PA**  
**Apprentice Training for the Electrical Industry**

*Revised June 2016*

**Main Campus:**

1719 Spring Garden Street  
Philadelphia, PA 19130

**Telecommunications Service Center:**

2150 S. 3<sup>rd</sup> Street  
Philadelphia, PA 19148

## **Table of Contents**

Introduction.....	3
Mission Statement .....	4
Our Campuses.....	4
Accreditation & Licensure.....	4
Hours of Operation.....	4
Board of Trustees .....	5
Calendar .....	5
Emergency Procedures/Closings.....	5
Student Services.....	6
Rules and Regulations.....	6
Complaint Procedures.....	8
Student Safety .....	9
Campus Security .....	11
Counseling Services.....	12
Drug-Free Workplace and Campus.....	12
The Family Education Rights and Privacy Act of 1974.....	12
Tuition and Fees.....	13
Refund Policy .....	13
Veteran’s Benefits .....	13
Academic Services.....	13
Admissions.....	14
Enrollment .....	15
Registration .....	15
Job Placement .....	15
Graduation Requirements .....	15
Certificates and Diplomas.....	15
Transfer between Programs .....	15
Withdrawal Policy .....	15
Continuing Education Program.....	16
Grading.....	16
Satisfactory Academic Progress.....	16
Remedial Assistance .....	16
Advisement .....	17
Computer Services .....	17
Library/Media Services.....	18
Transcripts and Student Records.....	18
Program Requirements.....	18
Course Descriptions .....	25
Administration and Faculty .....	31
Appendix A: Rules and Regulations .....	32
Appendix B: Enrollment Agreements.....	38

***The procedures and policies set forth in this Handbook are subject to revision from time to time. The most up-to-date available versions of the policies and procedures are contained in the electronic version of this document which may be accessed online at our website [www.atei98.org](http://www.atei98.org)***

## **Introduction**

Welcome to the International Brotherhood of Electrical Workers Local Union 98 Apprentice Training for the Electrical Industry (ATEI). You have the opportunity to obtain training from one of the best educational programs in the electrical industry. Our curriculum will provide you with the knowledge, skills and abilities necessary to become one of the finest electrical workers in the industry.

The ATEI apprenticeship is over 115 years old. You should know that you stand with those who have gone before you in the tradition of a long line of journey workers and apprentices who have helped to make our program the standard by which many others are judged. We hope you enjoy the many programs and the wealth of experiences that lie ahead.

This Student Handbook has been designed to provide an overview of our programs and the many courses that you will encounter on your journey. It is my sincere hope that you take full advantage of each and every opportunity provided along the way!

Mike Neill

Director of Apprentice Training

## **Mission Statement**

The mission of the Local 98 ATEI/IBEW is to lead the electrical industry by providing the best possible training to secure employment today and for the future

## **Our Campuses**

Our campuses are located in downtown Philadelphia. The Spring Garden Building has six classrooms with desktop computers, screens, projectors and full media and Internet access. There is also a fully tooled conduit-bending laboratory. There are also three meeting rooms with full media. There are two offices and a cafeteria for staff.

The telecommunications building on 3<sup>rd</sup> Street has four classrooms, a conference room, 3 offices and a 5000 square foot workshop for branch circuitry.

## **Accreditation and Licensure**

The ATEI has standards of apprenticeship on file with the US Department of Labor. Inquiries regarding this registration should be addressed to:

Ron Leonard  
US Department of Labor, Bureau of Apprenticeship and Training  
170 S. Independence Mall West, Suite 820 East  
Philadelphia, PA 19106

The ATEI received candidacy status with the Council on Occupational Education (June 2014). Inquiries regarding this accreditation status should be addressed to:

The Council on Occupational Education  
7840 Roswell Road  
Building 300, Suite 325  
Atlanta, GA 30350  
800-917-2081  
[www.council.org](http://www.council.org)

## **Hours of Operation**

The ATEI is opened Monday through Friday from 7:00 a.m. until 5:00 p.m. except for legal holidays. The offices are open from 7:00 a.m. until 4:00 p.m. on Monday through Friday when classes are scheduled. Some classes are scheduled on Saturdays, Sundays and in the evenings. Please refer to the online registration guide for actual class times.

## **Board of Trustees**

Thomas Moore – Chairman  
J. P. Rainey & Company, Inc.  
3548 “K” Street  
Philadelphia, Pa 19134

Michael Mascuilli - Secretary  
Local Union #98, IBEW  
2104 S. Hancock Street  
Philadelphia, Pa. 19148

Bruce D. Shelly – Trustee  
Shelly Electric Co. Inc.  
1126 Callowhill Street  
Philadelphia, Pa 19123

Nicholas Gummel - Trustee  
Local Union #98, IBEW  
9966 Crestmont Avenue  
Philadelphia, Pa. 19114

Timothy Cahill-Trustee  
Cahill Controls Inc.  
33 S. Delaware Ave. Suite 106 D  
Yardley, Pa 19067

Brian Burrows - Trustee  
Local Union #98, IBEW  
1701 Spring Garden Street  
Philadelphia, Pa. 19130

## **Calendar 2016**

*January 4 – Term Begins*

*March 4 – Term Ends*

*March 14 – Term Begins*

*May 23 – Term Ends*

*June 6 – Term Begins*

*August 5 – Term Ends*

*August 15– Term Begins*

*October 14 – Term Ends*

*October 24 – Term Begins*

*December 23 - Term Ends*

## **Emergency Procedures/Closing**

**Fires:** All Students are urged to acquaint themselves with the location of the exits, fire alarm switches, fire escapes, and available fire extinguishers throughout the School. In case of fire, call the emergency operator by selecting a line and dialing 911 immediately. Give the operator the precise location of the fire and he or she will alert the fire department.

**Emergency Evacuation:** When a fire alarm sounds please proceed to the closest exit and assemble on the street across from the school for a head count.

**Police:** To summon the police, select a line and dial 911, and the operator will alert the police department.

**Theft:** If a theft has taken place, please report it immediately to the administrative office or to an Instructor.

**Accidents and Illness:** When there is doubt as to procedure in the case of medical emergency, immediate medical advice should be secured by selecting a line and dialing 911.

In the event anyone becomes injured or ill at the School, emergency response should be contacted. Emergency personnel will make determinations as to the needed medical attention and transportation.

**Incident Reports:** A complete report of every incident, no matter how minor, should be made to the Director within 48 hours of the incident. Copies of incident reports can be obtained from the administrative office. For non-emergencies related to police, fire, and rescue, please contact the Director, and then file an incident report as described above. Any incident involving serious injury should be reported at any time during the day or night to emergency response at (911) then file an incident report as described above. In instances where there is doubt as to whether the incident is serious enough to require a report, it is better to report it immediately.

**Inclement Weather Policy:** If the campus is closed, students will be responsible for all assigned work, and classes will be rescheduled. In case of inclement weather, listen to KYW 1060 *radio* for school closing information – the *SCHOOL CLOSING NUMBER* is 2031. Every student will also receive a text message informing them of school closings.

## **Student Services**

The ATEI is dedicated to providing each student the support and services they need to successfully complete their program and enter the industry fully prepared. The services listed below were developed to assist the student in meeting their educational goals. Questions regarding these services should be sent to the Director, Instructors, or staff.

## **Rules and Regulations**

As a participant in this Program, you have been offered one of the most meaningful opportunities in your life: to develop the knowledge and skills that will enable you to perform at the highest levels of the professional trades represented by the International Brotherhood of Electrical Workers (IBEW).

The opportunity that you have been given is unique and valuable. Whether as an apprentice or at some other level of participation, not only will you have the opportunity to develop and/or expand a career in your trade, but you have been admitted to participate into the ATEI's outstanding accomplished Program. It is the sincere hope of the Trustees, Director, Instructors and staff of the Apprentice Training Program that you strive every day to make the most of this opportunity that you have been awarded. While the Program is demanding and rigorous, the benefits of your dedication will be enormous.

During your tenure in the Apprentice Training Program, you should always bear in mind that, in addition to the grants and supplemental training funds that the Program receives your education is primarily funded by the work of the men and women represented by the IBEW Local Union 98, through direct contributions from their pay package. Every member of IBEW Local Union 98 has committed to your education, as a way to ensure the high standards and excellence of the trades represented by the IBEW, and to ensure our ever unrivaled ability to provide the highest quality of work to our participating and valued employers. To respect the investment of IBEW Local Union's members, and to achieve the objectives for which this Program was developed, nothing short of your **complete commitment, focus, and dedication** is expected – or accepted. In working for you, so that you can have this opportunity, IBEW's members also expect that you will work for them – in dedicating yourself to the excellence of IBEW and our trades.

Bearing this in mind, these Rules and Regulations (hereafter referred to as “the Rules”) have been adopted by the Trustees of the ATEI in order to:

- Administer the Apprentice Training Program (“Program” of the ATEI);
- Develop uniform policies and procedures that are applicable to all participants; and
- Clearly set forth the obligations and requirements that are applicable to every participant.

These Rules have been developed so that every participant in the Program has the opportunity to know and understand what is required of him or her in order to successfully participate in the Program. **Every participant in the Program is responsible for knowing and following the Rules of the Program, at all times.**

As a participant in the Program, you are expected to thoroughly read and follow these Rules. If you do not understand a Rule, or how it applies to you, you can contact the Director or another Program official. You should not rely on information given to you by another Apprentice or Journey person -- even if other participants in the Program tell you what a Rule means, the only correct application of these Rules are the interpretation of the Program. Do not make the mistake of relying on anyone else, because your

misplaced reliance **will not** excuse your failure to comply with the Rules, as they are interpreted and applied by the Program.

These Rules may be changed from time to time by the Program and its Trustees. It is your responsibility to know and comply with Rules, as they may be amended or otherwise changed.

A complete set of the rules can be found in Appendix A.

## **Complaint Procedure**

**A. Informal Resolution of Disputes.** Apprentices are encouraged to informally discuss issues or problems that may arise, whether in the ATEI or on the job, with the Director, or instructors in an effort to obtain assistance or resolution. The purposes and objectives of the ATEI can be most effectively achieved through the process of cooperative problem solving.

**B. Procedure.** All apprentices have the right to present grievances regarding terms and conditions of their apprentice training, discipline, wages determinations, attendance determinations, assessments or evaluations, and any other matter or concern related to their enrollment and participation in the ATEI, using the following procedure:

***Step 1:*** The apprentice shall present a written grievance stating the specific facts and issues that are the subject of the grievance to the JATC, by presenting the written grievance to the Director. The JATC shall notify the apprentice of a date and time to appear before the committee for a hearing regarding the grievance. The apprentice must present any documents or witnesses that are relevant to the grievance at the committee hearing. The committee will issue a written decision regarding the grievance within 15 days after the hearing.

***Step 2:*** If the apprentice is dissatisfied with the decision of the committee regarding the grievance, the apprentice can, within 10 days after receiving the decision, appeal the decision in writing to the union by presenting the written appeal to the Director. The appeal shall fully state the basis for the appeal. The union shall notify the apprentice of a date and time to appear before them for a hearing regarding the grievance. The apprentice must present any documents or witnesses that are relevant to the appeal at the hearing. The union will issue a written decision regarding the appeal within 15 days after the hearing. The union decision shall be the final decision of the ATEI as to all matters.

In matters where the student believes that the ATEI has violated its enrollment agreement or other administrative issues, students may register a final appeal with the:

The Council on Occupational Education  
7840 Roswell Road  
Building 300, Suite 325  
Atlanta, GA 30350  
800-917-2081  
[www.council.org](http://www.council.org)

## **Student Safety**

Promotion of good health for all ATEI students has always been our concern. For all ATEI students, good health is essential to achieving educational goals.

It is the policy of the ATEI that all accidents and incidents which results in personal injury or illness, and/or damage to ATEI property shall be properly reported and investigated. This operating procedure establishes a process to ensure that all injuries, illnesses, incidents, and accidents are properly managed in a timely fashion, and that all causes (direct and contributory) are thoroughly identified and that the appropriate actions are taken.

This policy applies to all students, employees and visitors at any ATEI Training Center location at which work, study or any other ATEI sanctioned activity is being conducted.

### **PURPOSE**

This policy sets out guidelines and procedures for the reporting and investigation of injuries, incidents, illnesses, and accidents involving members of the Training Center community or visitors. Injuries and incidents must be reported and investigated in order to fulfill legal requirements, ascertain compliance with applicable regulations and ATEI policies, and assist the Training Center in taking steps to remedy hazardous conditions to prevent recurrence.

### **DEFINITIONS**

**Student** – an individual who has contracted with and is registered as a ATEI apprentice or journey person.

**Visitor** – an individual who is present on ATEI Training Center premises.

**Accident** – a sudden and unforeseen event attributable to any factor which caused (a) an injury to a member of the Training Center community while he/she was carrying out ATEI activities or (b) material damage to Training Center property.

**Incident** – an event or a situation attributable to any factor which could cause (a) an injury or illness to a member of the Training Center community or (b) material damage to Training Center property.

**Illness** – An unhealthy condition of body or mind; sickness.

**Injury** – arising out of or in the course of an accident, or a disease, suffered by a student, employee, or a visitor as a result of the work / study /environment or activities performed in the course of employment, study or work.

**Employee** – a person who is employed by the ATEI in either a part time or full time capacity.

### **POLICY**

### Internal Reporting

- All injuries, incidents, illnesses, or accidents involving students, employees, and visitors shall be reported by the individual involved, before leaving the Training Center premises, either to his/her Instructor, Coordinator, Health and Safety Director, Director, Assistant Director, or an authorized representative.

### Investigation

- The primary responsibility for investigation of an injury or incident lies with the craft instructor/coordinator or an authorized representative, which may include the Director or Assistant Director.
- The authorized representative is responsible for writing the investigation report, which shall include:
  - An account of the injury or incident;
  - Recommendations for remedial actions to prevent recurrence; and
  - The names of the departments, services, and persons to which the recommendations have been forwarded for follow up.

A copy of the investigation report shall be sent to both the ATEI Director.

## **REPORTING PROCEDURES FOR INJURY/INCIDENT REPORTING AND INVESTIGATION POLICY**

### *Responsibilities of Students, Employees and Visitors*

- A student, employee or visitor who is a victim of an injury or who has suffered an illness or disease shall:
- Immediately report the injury to the authorized representative;
- Complete and sign the Injury, Illness or Accident Report as soon as possible following the occurrence. All reports are located in each administrative office.

### *Responsibilities of Instructors or Administrators*

An instructor or administrator should:

- Ensure that the victim gets immediate medical attention if required;
- Call 911 for Emergency Medical Services if necessary;
- Obtain the names of any witnesses;
- Ensure that any one who is a victim of an injury, illness or accident completes and signs the appropriate reporting form;
- Investigate the injury

Maintaining good health requires access to health care when it is needed. The following medical facilities, health centers, and hospital are available to render the necessary health and medical services:

**Major injuries, incidents, or illnesses (Outside of 911 calls):**

Hahnemann University Hospital  
Broad and Vine  
Philadelphia, PA 19102  
Phone 215-762-7000  
Fax 215-762-8109

**Minor injuries, incidents, or illnesses:**

Hahnemann University Hospital  
Broad and Vine  
Philadelphia, PA 19102  
Phone 215-762-7000  
Fax 215-762-8109

**Substance abuse and mental health issues:**

Allied Trades Assistance Program  
2791 Southampton Road  
Philadelphia, Pa. 19154  
Phone 215-677-8820  
Fax 215-677-9046

**Additional Injury, Illness or Accident Protocol**

- Follow the three emergency action steps recommended by the American Red Cross (Check, Call, and Care).
- Sound the emergency alarm – if necessary.
- Supervise the evacuation of the building (Please follow guidelines as set forth on the Training Center emergency evacuation floor plans).
- Provide basic care for an injury or sudden illness until the victim receives professional medical help.

**Campus Security**

In addition to the health of our students, the safety and security of our students, their property and campus property is of primary concern. The following policies are in effect to ensure this security.

- 1) All Faculty, staff and students are to report the loss or damage of school equipment to the Director. An incident report form should be used for this purpose.
- 2) No guns, knives or other weapons are permitted on the campuses or in the parking lots at any time. Any student found to possess these items on campus or at their assigned work place will be immediately dismissed.
- 3) Students are to report any threats or attacks made by fellow students to the Director. A full investigation will be conducted. If these reports are substantiated, the offending student will be immediately dismissed.
- 4) Any other incidents or actions will threaten the harmony or the security of the campus, should be reported immediately to the Director.

Both campuses are equipped with video surveillance.

### **Counseling Services**

The ATEI does not provide any direct formal counseling services, but does encourage students to seek any assistance that they require and to discuss such matters privately with the Training Director. To this end, a list of community counseling resources is available through the Director's office. The student should consult the IBEW 98 Benefits Office regarding potential coverage for counseling services.

### **Drug Free Workplace and Campus**

The unlawful sale, purchase, distribution, possession or use of any controlled substance or the unlawful possession and use of alcohol is prohibited in or on the school owned or controlled property, or within a 200- foot perimeter of school property. No staff member/student is to report to work/class or any school activity while under the influence of illegal drugs or alcohol. Violation of these policies by a staff member/student shall be reason for referral for treatment for a drug/alcohol use disorder or for disciplinary action up to and including termination of employment or expulsion from the School. Such action will be in accordance with the applicable collective bargaining agreements and other policies and procedures; or referral for prosecution consistent with local, state, and federal law. To comply with federal Drug - free Schools/Campuses Act, the School will provide an annual notice regarding its drug prevention program to students and staff and conduct a biennial review of the program.

### **The Family Education Rights and Privacy Act of 1974**

The Federal Family Educational Rights and Privacy Act (FERPA) of 1974 regulate a wide range of privacy related activities including:

- Management of student records maintained by the School
- Regulations regarding who has access to student records

•For which purposes access to student records is granted

School officials will release educational information upon receipt of a signed, dated, written consent of the student which must specify the records that may be disclosed and identify the party to whom the disclosure may be made, including:

- Parents of a dependent student, as defined by the Internal Revenue Code of 1954, Section 152 and who supply supporting documentation, may be granted access to a student's educational record under some circumstances.
- In connection with Financial Aid, to organizations who are conducting studies that are on behalf of educational agencies;
- To Federal or State educational authorities;
- To accrediting organizations;
- In compliance with a lawfully issued subpoena;
- In connection with a health or safety emergency.

Non-School individuals (including parents except as described above) *may not have access* to educational records other than Directory Information unless authorization from the student is obtained or a lawful subpoena/court order is issued to the School. Examples of records not released are grades; grade point average; the specific number of hours/credits enrolled, passed, or failed; Social Security Number; student ID number; name of parents or next of kin; and/or residency status.

Students may complete a form authorizing the Director's Office to permit non-School individuals to view the student's academic record.

### **Tuition and Fees**

There are NO tuition and fees for students who have been accepted into the apprenticeship program.

### **Refund Policy**

The only monies collected are a non-refundable application and testing fee. Monies are also collected for books. Since there is no tuition, there is NO refund.

### **Veteran's Benefits**

The School is pleased to participate in the Veteran's Benefits program. The Director can assist you in the certification of your benefits agreement. For further information, students should contact the Veterans Administration at [www.gibill.va.gov/education/benefits.htm](http://www.gibill.va.gov/education/benefits.htm)

## **Academic Services**

The ATEI has developed unique programs and curriculum designed to achieve the highest standards of performance in our industries. The successful completion of these programs will enable the student to have a successful career and multiple opportunities within the industry.

## Admissions

- A. Applications for "Electrical Apprenticeship" are taken in the first two full weeks of April each year. Applications and payment of a \$40.00 processing fee must be made in person at: 1719 Spring Garden Street, Philadelphia, PA 19130. Only money orders will be accepted. No cash or personal checks.

Applications for "Telecommunications Apprenticeship" are taken on the third Thursday of each month between 8:00 AM & 4:00 PM. Applications and payment of a \$40 processing fee must be made in person at: 2150 South 3rd Street Philadelphia, PA 19148. Only money orders will be accepted. No cash or personal checks.

- B. Applicants should:
- a. Visit [www.atei98.org](http://www.atei98.org)
  - b. Attend a required orientation session.
  - c. Read about each program available at ATEI,
    - i. Decide on which trade interests them most, and apply. Applicants MUST choose ONE craft to which they want to apply – duplicate applications to different programs will be dismissed; unless otherwise approved by the ATEI Director.

- C. Upon completion of application an individual is required to:

- a. Sign it
- b. Gather required documents and make an application packet; consisting of:
  - i. *Signed copy of application*
  - ii. *Copy of High School Diploma or proof of GED*
  - iii. *Sealed copy of H.S Transcripts or GED grades*
  - iv. *Take the Aptitude Test and earn a qualifying score*
  - v. *\$40 money order*
  - vi. *Proof You Have Registered for Selective Service (Males Only)*

- D. Upon completion of application and retrieval of required documents, applicant should hand deliver application package to one of the following addresses:

- a. **Main Campus** (1719 Spring Garden Street – Philadelphia, Pa. 19130)
- b. **Telecommunications Campus** (2150 S. 3<sup>rd</sup> Street, Philadelphia, PA 19148)

- E. Sit for the Qualifying Exam

- F. Interview with Staff and Trustees

- G. Scores for the application, interview, and qualifying tests are ranked highest to lowest and students are selected for admission from the top of the lists until all available seats are filled.

H. Students are notified by certified mail or admission or rejection from the program.

### **Enrollment**

Once a student has been notified of their acceptance to the program they must complete the apprenticeship agreement document. Until this document has been completed, no student may start the program.

### **Registration**

Students enrolled in the apprenticeship programs are automatically registered for technical classes each term. Anyone who wishes to take Continuing Education classes must register by the published deadlines listed on the ATEI website

### **Job Placement**

Students in the apprenticeship program are automatically placed on a job. Once they have graduated, journey workers receive placement assistance from the union. Work placement from the union is continuous until retirement.

### **Graduation Requirements**

Students who have completed the core curriculum all technical courses in their program and have completed the requisite number of hours of on-the-job internship are eligible for graduation from the apprenticeship program. They receive an apprenticeship completion certificate from the US Department of Labor. Graduation ceremonies are held once a year in the spring.

### **Certificates and Diplomas**

Students who complete the apprenticeship program receive an apprenticeship completion certificate from the US Department of Labor and a diploma from the Pennsylvania Department of Education. The ATEI does not offer degree programs at this time.

### **Transfer from Other Institutions**

Students who transfer from another apprenticeship program or other institution are tested by the examination board and placed accordingly.

### **Transfer Between Programs**

Students who wish to transfer to the other trade program must go through the admissions process for that program. If they are accepted only safety classes and general studies classes can be transferred to the other program.

## **Withdrawal Policy/Leaves of Absences**

Students who wish to withdraw from the program should send a request in writing to the director. A leave of absence may be granted for personal or medical reasons at the discretion of the director. If the Director believes that the student should be granted a leave of absence, the student will be notified in writing.

## **Continuing Education Programs**

The ATEI is pleased to offer a number of courses and certificate programs for the journey worker in the field. Whether you are interested in updating your skills, learning something new or working towards advancement, these courses are designed with you in mind. A schedule of classes is posted on the ATEI website.

## **Grading**

- Minimum passing grade is 70.
- Any apprentice failing during the course of the year may be called before the Committee for an evaluation of *his/her* status in the program.
- In the case of an apprentice failing a complete term of school, the opportunity to repeat the failed term will be at the discretion of the Committee and under the terms listed below:
  - Any apprentice failing a complete term of school will be penalized two thousand (2,000) hours which becomes effective from the first day of the month after the date of the failure. This penalty will be in addition to any other penalties incurred.
  - Any apprentice repeating the term will not be compensated for school hours.
  - Should an apprentice fail the same school year twice, the apprentice will be dismissed.

Apprentices should refer to individual syllabi to determine how their grades will be measured for that class.

## **Satisfactory Academic Progress**

Students must maintain a 70 percent average in all classes to make satisfactory academic progress. Students, who are unable to meet this standard after several efforts, will be given additional support. If a faculty member feels that a student will be unable to meet the required competencies, that student will be notified and required to meet the board. The board will make appropriate decisions about remediation or dismissal from the program.



## **Remedial Assistance**

Students who enter the program are required to read at the 11<sup>th</sup> grade level. Approximately, 90-95% of all reading material is at that level. Some texts and manuals have higher reading levels because of the technical nature of the industry. Students who have difficulty comprehending these materials have two options for remedial assistance as described below:

- Peer-to-peer assistance-Through the faculty, students who need assistance in technical subject areas may be assigned a peer counselor, who will work with them to master a particular skill or reading requirement.
- Tutoring programs are available in reading, writing and mathematics. Students with specific difficulties will be assigned to this intensive program. After they complete the program, they may sign up for follow-up tutoring or the peer-to-peer assistance program,

Finally, because we have a small student-teacher ratio, many of our students are given the opportunity to work with instructors on remedial issues.

## **Advisement**

Staff is available for consultation on student progress, professional development and remediation requirements. Please check posted office hours to meet with a faculty member or call to schedule an appointment.

The staff are available to provide general advisement on available services, partnership programs and continuing education opportunities. Schedule an appointment to discuss these services.

## **Computer Services**

The ATEI has a computer lab which is open to students according to the hours posted. Whether using this service on your own time or during class, the following rules apply.

Electronic media cannot be used for knowingly transmitting, retrieving, or storing any communication that is:

- Discriminatory or harassing;
- Derogatory to any individual or group;
- Obscene, sexually explicit or pornographic;
- Defamatory or threatening;
- In violation of any license governing the use of software; or
- Engaged in for any purpose that is illegal or contrary to ATEI policy or business interests.

*Generally, electronic information created and/or communicated by a student using e-mail, word processing, utility programs, spreadsheets, voicemail, telephones, Internet and bulletin board system access, and similar electronic media is not reviewed by the ATEI. However, the ATEI reserves the right, at its discretion, to review any student's electronic files and messages to the extent necessary to ensure electronic media and services are being used in compliance with the law, this policy, and other ATEI policies. Students should not assume electronic communications are completely private. Accordingly, if students have sensitive information to transmit, they should use other means.*

### **Library/Media Services**

The ATEI maintains a curricular support library on campus, which functions as a resource center for the courses offered. Within this library, we maintain all required and supplemental texts and readings for all courses, a collection of reference guides, collections of journal, periodicals related to the finishing industry and construction trades and a variety of videos and cd's related to craft specialization and labor history. The School also has access to a number of online databases in the construction field and an academic research database.

### **Transcripts and Student Records**

Students may request a copy of their transcript at any time. Official copies of their transcripts are available at a cost of \$5.

Students wishing to obtain a copy of their student records can do so by filling out an appropriate "record request form". Once the form is complete and turned in with a \$5 processing fees, the record will be made available to the student.

### **Program Requirements**

#### **Electrician (Wireman) Program**

Program Objectives:

**Troubleshooting** — Determining causes of operating errors and deciding what to do about it.

**Repairing** — Repairing machines or systems using the needed tools.

**Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

**Judgment and Decision Making** — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

**Installation** — Installing equipment, machines, wiring, or programs to meet specifications.

**Active Learning** — Understanding the implications of new information for both current and future problem-solving and decision-making.

**Complex Problem Solving** — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

**Equipment Maintenance** — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

### Classroom/Laboratory Requirements

Year 1	Course Number	Title	Lecture Hours	Lab Hours
<b>Term 1</b>	LBST100	Intro to Trade Unionism I	10	8
	ELTH101	DC Theory I	12	6
	ELEC101	Code & Practices I	18	0
	ELEC102	Conduit Bending I	9	9
<b>Term 2</b>	SFTH110	Safety in the Construction Trades (OSHA 30) Part 1	18	0
	ELTH111	DC Theory II	8	10
	ELEC102	Conduit Bending II	6	12
	ARCH110	Blueprint Reading Residential	12	6
<b>Term 3</b>	SFTH110	Safety in the Construction Trades (OSHA 30) Part 2	18	0
	ELTH121	DC Theory III	12	6
	ELEC103	Residential Wiring Practices	6	12
	ELEC104	Residential Wiring Code	18	0
		<b>TOTAL YEAR ONE</b>	<b>147</b>	<b>69</b>

Year 2	Course Number	Title	Lecture Hours	Lab Hours
<b>Term 1</b>	ELEC118	Transformers I	14	4
	ELTH102	AC Electrical Theory I	18	0
	LBST110	Intro to Trade Unionism II	18	0

	ELEC119	NEC Codeology I	18	0
<b>Term 2</b>	ELTH112	AC Electrical Theory II	18	0
	ELEC120	NEC Codeology II	18	0
	ELEC107	AC Circuits	18	0
	ARCH111	Blueprint Reading Commercial	12	6
<b>Term 3</b>	ELEC108	Conduit Bending III	6	12
	ELEC122	Test Instruments & Applications	6	12
	ELEC110	NFPA 70 E Part I	18	0
	ELEC121	Code and Practices II	18	0
		<b>TOTAL YEAR TWO</b>	<b>182</b>	<b>34</b>

Year 3	Course Number	Title	Lecture Hours	Lab Hours
<b>Term 1</b>	ARCH112	Blueprint Reading Industrial	0	18
	ELEC218	Transformers II	14	4
	ELEC123	Motors I	12	6
	ELEC222	Code & Practices III	18	0
<b>Term 2</b>	ELEC114	Services	16	2
	ELEC115	Motor Control I	12	6
	ELEC113	Grounding I	18	0
	ELEC116	Security Systems I	18	0
<b>Term 3</b>	ELEC117	Fire Alarm Systems I	12	6
	ELEC111	NFPA 70E Part II	18	0
	MATH150	Calculations I	18	0
	ELEC244	Power Quality	18	0
		<b>TOTAL YEAR THREE</b>	<b>174</b>	<b>42</b>

Year 4	Course Number	Title	Lecture Hours	Lab Hours
<b>Term 1</b>	ELEC213	Grounding II	18	0

	ELEC221	Motors II	9	9
	ELEC217	Fire Alarm Systems II	18	0
	ELEC215	Motor Control II	9	9
<b>Term 2</b>	ENVS125	Solar & Photovoltaic Systems I	12	6
	ELEC230	Healthcare Systems	18	0
	SFTH211	Hazardous Locations	18	0
	MATH151	Calculations II	18	0
<b>Term 3</b>	ELEC240	High Voltage Terminations	12	6
	ENVS225	Solar & Photovoltaic Systems II	14	4
	ELEC223	Code and Practices IV	18	0
	ELEC216	Security Systems II	18	0
		<b>TOTAL YEAR FOUR</b>	<b>182</b>	<b>34</b>



## Telecommunications Program

Program Objectives:

**Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

**Operation and Control** — Controlling operations of equipment or systems.

**Operation Monitoring** — Watching gauges, dials, or other indicators to make sure a machine is working properly.

**Troubleshooting** — Determining causes of operating errors and deciding what to do about it.

**Complex Problem Solving** — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

**Equipment Maintenance** — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

**Reading Comprehension** — Understanding written sentences and paragraphs in work related documents.

**Speaking** — Talking to others to convey information effectively.

**Judgment and Decision Making** — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

### Classroom/Laboratory Requirements

<b>Year 1</b>	<b>Course Number</b>	<b>Title</b>	<b>Lecture Hours</b>	<b>Lab Hours</b>
	LBST100	Intro to Trade Unionism I	10	8
	LBST110	Intro to Trade Unionism II	18	0
	SFTH111	First Aid/CPR	10	6
	ELEC239	Structured Cable & Wiring I	18	0
	ELEC259	Structured Cable & Wiring II	18	0
	TELE110	Copper Training I	0	20
	TELE112	Fiber Optics I	12	4
	SFTH110	Safety in the Construction Trades (OSHA 30) Part 1	18	0
	SFTH110	Safety in the Construction Trades (OSHA 30) Part 2	18	0
		<b>TOTAL YEAR ONE</b>	<b>122</b>	<b>38</b>

<b>Year 2</b>	<b>Course Number</b>	<b>Title</b>	<b>Lecture Hours</b>	<b>Lab Hours</b>
	ARCH110	Blueprint Reading Residential	12	6
	ARCH111	Blueprint Reading Commercial	12	6
	ELTH101	DC Theory I	12	6
	ELTH101	DC Theory II	8	10
	ELTH101	DC Theory III	12	6
	TELE120	Telephony	26	20
	TELE121	Telephone Switches I	16	8
		<b>TOTAL YEAR TWO</b>	<b>98</b>	<b>62</b>

<b>Year 3</b>	<b>Course Number</b>	<b>Title</b>	<b>Lecture Hours</b>	<b>Lab Hours</b>
	LBST120	Intro to Trade Unionism III	18	0
	ELEC101	Code & Practices I	18	0
	ELEC121	Code and Practices II	18	0
	ELEC113	Grounding I	18	0
	TELE210	Copper Training II	8	16
	TELE211	Copper Training III	12	4
	TELE122	Pathways and Spaces	6	10
	TELE220	Fiber Optics II	6	10
	TELE221	Fiber Optics III	6	10
		<b>TOTAL YEAR THREE</b>	<b>110</b>	<b>50</b>

<b>Year 4</b>	<b>Course Number</b>	<b>Title</b>	<b>Lecture Hours</b>	<b>Lab Hours</b>
	TELE227	Telephone Switches II	8	28
	ELEC234	Electrical Supervision	18	0
	TELE228	Fire stopping	18	0
	TELE229	Local Area Networks	32	0
	TELE230	CCTV	24	8
	TELE231	Audio Visual Installations	16	8
		<b>TOTAL YEAR FOUR</b>	<b>116</b>	<b>44</b>

**Total Classroom (446) and Laboratory Hours (194)**

**640 hours\*\***

## Internship Requirements

Job Description	Hours
Project Layout and Planning	300
Underground Installations	300
Routing Cable	400
Testing, Certifying & Troubleshooting LAN Systems	700
Security System Installation	800
Installing Communication and Sound Systems	1000
Installing Networking Communication Wire and Cables	1700
Terminating Wires and Cables	500
Splicing Wires and Cables	500
Service and Troubleshooting	800
Material Handling and Pre-fabrication	300
Safety Awareness and Other Specialized Areas	700
<b>TOTAL</b>	<b>8000</b>

**Total Internship Hours** **8000 Hours**

**Total PROGRAM Hours** **8640 Hours**

*\*\*Please note continuing education is required to achieve Senior Technician status after completion of the apprenticeship program.*

## Course Descriptions

### ARCH110 BLUEPRINT READING RESIDENTIAL.

This course will focus on becoming familiar with numerous sets of blueprints and specifications for various residential buildings. For each set of blueprints, the course participants will be challenged to search through the drawings to find answers to the various questions. Instructor lead lectures will cover topics such as benchmarks, specifications, and the relationship of blueprints to the **National Electrical Code**.

### ARCH111 BLUEPRINT READING COMMERCIAL.

This course will focus on becoming familiar with numerous sets of blueprints and specifications for various commercial buildings. For each set of blueprints, the course participants will be challenged to search through the drawings to find answers to the various questions. Instructor lead lectures will cover topics such as benchmarks, specifications, and the relationship of blueprints to the **National Electrical Code**.

ARCH112 BLUEPRINT READING INDUSTRIAL. This course will focus on becoming familiar with numerous sets of blueprints and specifications for various industrial projects. For each set of blueprints, the course participants will be challenged to search through the drawings to find answers to the various questions. Instructor lead lectures will cover topics such as benchmarks, specifications, and the relationship of blueprints to the **National Electrical Code**.

ELEC101 NEC CODE AND PRACTICES I. This course is designed to teach how to read and interpret the meaning of the NEC®, and how to find information in the Code Book. Each Article of the Code is thoroughly discussed and reviewed in easy-to-understand language. After each unit the student is encouraged to complete a comprehensive practical review worksheet in order to verify the student's understanding of the material presented in the unit. A final examination is given to determine the student's overall comprehension of the NEC based on the material presented in the course.

ELEC102 CONDUIT BENDING I AND II. This course is designed to instruct a beginner in the basic concepts of conduit bending. The lessons begin with how to fabricate 90 degree stubs as well as offsets and kicks. Lessons progress to include back to back bends, 3 and 4 point saddles and culminate with segment and concentric bends. Not only will you learn the bends, you must install those bends into the "Conduit Fabrication Mobile Workstation". You will learn with both EMT and Rigid Conduit and be exposed to hand benders, hydraulic bender, Greenlee 555 electric bender, and Rigid 535 threader.

ELEC103 RESIDENTIAL WIRING PRACTICES. The Residential Wire course is devoted to all aspects of residential wiring. Students will have the opportunity to take part in apartment wiring that will include; lighting receptacles major appliances, alarm systems, telephone, television, and an electrical service. Additionally, students will learn how to wire major house additions, upgrading of a kitchen, how to wire older houses and work with knob and tube electrical systems. This course will stress National Electric Code compliance and demonstrate proper application of materials, methods of installation that are safe and free from defects.

ELEC104 RESIDENTIAL WIRING CODE. This course provides students with expanded technical understanding and skills necessary for residential wiring. Students will be provided with experience for installations common to residential structures including general receptacles, lighting and designated circuit layout and installation.

ELEC107 AC CIRCUITS. A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Sinusoidal steady state circuit analysis using complex numbers, inductance, capacitance, RL and RC time constants, transformers, resonance, filters, and frequency response.

ELEC108 CONDUIT BENDING III. Included in this lab/lecture class are the hands-on experience and layout fundamentals for 1 ½" through 4" rigid, IMC and EMT conduit with the use of electric and hydraulic bending equipment.

ELEC110 NFPA70E PART I. Hundreds of worker deaths and thousands of injuries could be prevented each year by following 2012 NFPA 70E: Standard for Electrical Safety in the Workplace®. Originally developed at OSHA's request, NFPA 70E provisions used to identify electrical safety hazards and reduce employee exposure to those hazards. This course provides vital information about today's Standard through individual courses addressing the safety-related work practices and procedures that employees, supervisors, and owners need to understand to avoid electrical tragedies on the job.

ELEC111 NFPA70E PART II. This course covers various aspects of the safety-related work practices and procedures addressed by NFPA 70E: Standard for Electrical Safety in the Workplace. The course begins with an overview of the lessons and instructions on how to navigate the NFPA 70E. Then, you'll learn how the Standard is intended to aid workers and employers in minimizing the risk of employee injuries from electrical hazards and to establish a safer

workplace for employees who work on or with electrical equipment.

**ELEC113 GROUNDING I.** Understanding the NEC requirements for grounding and bonding of electrical systems is vital, and this course lets you work at your own pace to improve your grasp of a complex issue. Lessons cover the reasons why the National Electrical Code requires a grounded circuit conductor in some systems.

**ELEC114 SERVICES.** This course provides application of electrical principles up to 480 volts, alternating current (AC), transformers, motors and motor controls, and wiring methods. Instruction is a combination of classroom discussion and laboratory training on installation, troubleshooting, repair and preventive maintenance of building electrical and basic conveyor motor control systems. Emphasis will be placed on electrical and mechanical safety and utilization of the National Electrical Code.

**ELEC115 MOTOR CONTROLS I.** This course covers alternating current (AC) and direct current (DC) motors and generators/alternators. Theory of operation, connections, installation and maintenance will be covered in the lecture portion of the course. Students will be given an opportunity to determine the load characteristics and connections of AC and DC motors and generators/alternators.

**ELEC116 SECURITY SYSTEMS I.** This comprehensive course covers key principles of security detection and protection systems in detail, including wiring, contacts and sensors, components, fire and safety protection devices, control options and user interfaces.

**ELEC117 FIRE ALARM SYSTEMS I.** Modern fire alarm systems require careful, validated installation and maintenance to ensure that false alarms are infrequent and that a real fire would be detected quickly without damage to property or loss of life. This course provides the knowledge and skills necessary to work on these systems competently.

**ELEC118 TRANSFORMERS I.** The goal of the course is to provide a complete foundational understanding of the internal and external elements of the transformer and fundamentals of transformer operation and maintenance.

**ELEC119 NEC CODEOLOGY I.** Creating a foundation of understanding in the layout and organization of the National Electrical Code (NEC)<sup>®</sup>, this fast paced course with brief presentations and classroom exercise will “groove in” the participants skills in quickly accessing the NEC to answer on the job questions or for test preparation.

**ELEC120 NEC CODEOLOGY II.** A more advance look at the NEC to facilitate using the code in the workplace and in simulations throughout the electrical shops. Students will be able to able the code to real time scenarios and demonstrate their familiarity with the concepts and constructs of the NEC.

**ELEC121 NEC Code and Practices II.** This course continues interpreting the meaning of the NEC<sup>®</sup>, and how to find information in the Code Book. Each Article of the Code is thoroughly discussed and reviewed in easy-to-understand language. After each unit the student is encouraged to complete a comprehensive practical review worksheet in order to verify the student's understanding of the material presented in the unit. A final examination is given to determine the student's overall comprehension of the NEC based on the material presented in the course.

**ELEC122 TEST INSTRUMENTS AND APPLICATIONS.** Test Instruments class begins with an introduction to test instruments and their general use in their specific applications in the industry. Once a thorough overview has been discussed, the class focuses on several test instruments. It begins it's in depth study with the voice-data-video (VDV) and power quality test instruments. Next, it explores electronic circuit test instruments, grounding systems, and earth ground test instruments. Safety practices and common industrial applications are emphasized throughout the book, especially as it relates to high voltage and insulation test instruments.

**ELEC123 MOTORS I.** This exciting course covers the topic of electric motors and the requirements found in the NEC covering conductors, overcurrent protection and disconnect sizing, as well as prescriptive installations requirements.

**ELEC213 GROUNDING II.** Learn about the definitions of terms that relate to grounding of systems; the performance requirements for grounded systems; the systems that are required, permitted, or not permitted to be grounded; and the methods of grounding those systems. Grounding of systems supplied by a utility will be discussed along with systems that are created or generated as part of the wiring of a building or other premises.

**ELEC215 MOTOR CONTROLS II.** Provides knowledge and skills needed to design, install, maintain, service and troubleshoot electric motors. Focuses on the operation and installation of control systems, specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions.

**ELEC216 SECURITY SYSTEMS II.** This course covers access control methods, along with locking mechanisms, control options and user interfaces. The steps for design and installation are covered with discussion of

programming, testing, and troubleshooting for both security and access control projects.

**ELEC217 FIRE ALARM SYSTEMS II.** This course was designed for technicians working in the following fire alarm systems activities: system layout (plan preparation), system equipment selection, system installation, system acceptance testing, system trouble-shooting, system servicing, and system technical sales. Technical areas covered include applicable codes and standards, types of detectors and signaling systems, supervision requirements, power requirements, building/space structure and occupancy considerations, and basic electricity and electronics.

**ELEC218 TRANSFORMERS II.** This course provides an overview of transformer types, construction, connections, protection, grounding, and associated safety procedures. Direct current (DC) motors, single-phase and poly-phase alternating current (AC) motors, generators, and alternators with emphasis on construction, characteristics, efficiencies, starting, and speed control.

**ELEC221 MOTORS II.** This part of the course focuses on various types of electric motors used in commercial and industrial applications. Perfect for all types of service and maintenance departments. Study all types of DC, AC, Stepper, Servo, Linear, and Synchronous motors. We will at torque and other characteristics and see how open loop and feedback works.

**ELEC222 NEC Code and Practices III.** This course continues interpreting the meaning of the NEC<sup>®</sup>, and how to find information in the Code Book. Each Article of the Code is thoroughly discussed and reviewed in easy-to-understand language. After each unit the student is encouraged to complete a comprehensive practical review worksheet in order to verify the student's understanding of the material presented in the unit. A final examination is given to determine the student's overall comprehension of the NEC based on the material presented in the course.

**ELEC223 NEC Code and Practices IV.** This course continues interpreting the meaning of the NEC<sup>®</sup>, and how to find information in the Code Book. Each Article of the Code is thoroughly discussed and reviewed in easy-to-understand language. After each unit the student is encouraged to complete a comprehensive practical review worksheet in order to verify the student's understanding of the material presented in the unit. A final examination is given to determine the student's overall comprehension of the NEC based on the material presented in the course.

**ELEC224 NEC Code and Practices V.** This final course continues interpreting the meaning of the NEC<sup>®</sup>, and how to find information in the Code Book. Each Article of the Code is thoroughly discussed and reviewed in easy-to-understand language. After each unit the student is encouraged to complete a comprehensive practical review worksheet in order to verify the student's understanding of the material presented in the unit. A final examination is

given to determine the student's overall comprehension of the NEC based on the material presented in the course.

**ELEC230 HEALTHCARE SYSTEMS.** This covers on critical topics in health care construction, including: the health care planning, design, and construction process; Life Safety Code<sup>®</sup> compliance; construction risk assessment; electrical systems; medical gas systems; medical technology; communication; and project expectations.

**ELEC232 BUILDING AUTOMATION I.** This course will enable you to identify and describe the major components in a BAS along with the basic mechanical components and controls in an HVAC control system. You will be able to describe and explain the basic functions of DDC systems and HMI basics, reference codes and standards applicable to BAS, and justify control components for project work. This course will help you explain BAS in non-ATC systems (lighting, fire, security, etc.), the process of implementing BAS, and Energy Conservation Control Strategies. You will also learn where to look for additional resources.

**ELEC233 BUILDING AUTOMATION II.** This course will give you a broad introduction to the specific issues involved with Building Automation Systems (BAS). You will explore the processes that occur at every level in the air conditioning industry, including digital controls. Learn about sensing and measurement, actuation, analog output devices, and relays. Computer interfaces are discussed including web interfaces. Your survey of the world of BAS includes: Future of BAS, Digital Direct Control (DDC) Basics, Field Devices, the Human Machine Interface (HMI), BAS Design and Specification, Energy Conservation Control Strategies, and System Maintenance.

**ELEC234 ELECTRICAL SUPERVISION.** This course is designed to provide critical skills to supervisors with a wide range of responsibilities. Topics covered include the supervisor's role, communication, performance management, employee relations, safety, production management, understanding costs and contracts. The material enriches the understanding of business and processes of construction and gives insight into what might be ahead when moving up the administrative ladder.

**ELEC238 NURSE CALL SYSTEM.** This course prepares the technician to install, configure, program and troubleshoot a patient communications system. The course places emphasis on hands-on practice with the system to include its central equipment, staff consoles, annunciators, patient stations and peripheral devices.

**ELEC239 STRUCTURED CABLE AND WIRING.** This course delivers a comprehensive discussion about the foundation of technologies – Structured Wiring. Technical

principles, including tools, wiring, components and outlets, are presented and explained. Detailed step-by-step design and installation procedures, testing and troubleshooting methods and much more are covered.

**ELEC240 HIGH VOLTAGE TERMINATIONS.** This course describes the components of high voltage terminations and demonstrates how high voltage terminations are made.

**ELEC244 POWER QUALITY.** Definitions and standards of power quality, kinds of power quality problems, sources of sags and transient over voltages, distribution system analysis and protection, protection devices, harmonic distortion, principles for controlling harmonics, devices for filtering harmonics, time and frequency domain methods of analysis, Fourier, Walsh, and Hartley transforms, monitoring power quality, and power quality improvement.

**ELEC250 LIGHTING ESSENTIALS I.** This class offers students design scenarios with an in-depth rationale for the proposed solution, insightful lighting distribution diagrams, floor plans, and details for lighting installation and construction. Featured exercises offer focused development of lighting design skills in preparation for working on actual lighting design projects.

**ELEC251 LIGHTING ESSENTIALS II.** This course will introduce the lighting industry through an introduction to lighting terminology, nomenclature, system technology and basic applications.

**ELEC259 STRUCTURED CABLING & WIRING II.** This class reinforces the important concepts of cables and connectors, structured cabling standards and applications.

**ELEC299 NEC LICENSING COURSE.** This class is designed to prepare students to sit for the Limited or Unlimited NEC Licensing exam. Successful students will walk away with an in-depth understanding of the NEC book and prepared to take the next steps towards becoming a license electrical contractor.

**ELTH101 DC THEORY I, II AND III.** This course covers the study of Ohm's Law, Kirchhoff's Law and network theorems, with an emphasis on the theoretical concepts as related to electricity/electronics. The application of DC theory through laboratory experiments are also examined. Instruction in the operation of basic test equipment is used to provide verification of topics and to reinforce the theory.

**ELTH102 AC THEORY I.** This course offers the Theory of AC Electronics as it applies to basic and advanced circuits found in analog electronics. Basic algebra and trigonometry will be used as the tools for understanding the AC circuit as it applies to electronics systems.

**ELTH111 DC THEORY II.** This course covers the study of Ohm's Law, Kirchhoff's Law and network theorems, with an emphasis on the theoretical concepts as related to electricity/electronics. The application of DC theory through laboratory experiments are also examined. Instruction in the operation of basic test equipment is used to provide verification of topics and to reinforce the theory.

**ELTH112 AC THEORY II.** The course prepares the student for more advanced studies in Communications and Digital Electronics. Subjects covered include Capacitors, Magnetic Circuits, Inductors, Sinusoidal Alternating Waveforms, Basic Elements and Phasors, Series and Parallel AC Circuits, Series-Parallel AC Networks, Methods of Analysis, Network Theorems (AC), Power (AC), Resonance, Filters and Bode Plots, Pulse waveforms, and an introduction to System Analysis.

**ELTH121 DC THEORY III.** This course covers the study of Ohm's Law, Kirchhoff's Law and network theorems, with an emphasis on the theoretical concepts as related to electricity/electronics. The application of DC theory through laboratory experiments are also examined. Instruction in the operation of basic test equipment is used to provide verification of topics and to reinforce the theory.

**ENVS125 SOLAR AND PHOTOVOLTAIC SYSTEMS I.** This course will introduce you to PV component theory, system design, industry codes and standards for PV systems, and unique design problems and solutions. Emphasis is placed on developing skills for design and installation of a complete PV system.

**ENVS225 SOLAR AND PHOTOVOLTAIC SYSTEMS II.** This class will study the behavior of photovoltaic solar energy systems, focusing on the behavior of "stand-alone" systems. The design of stand-alone photovoltaic systems will be covered. This will include estimation of costs and benefits, taking into account any available government subsidies. Introduction to the hardware elements and their behavior will be included

**LBST100 INTRODUCTION TO TRADE UNIONISM I.** This class is designed to acquaint students with the labor movement, unions, apprenticeship, the school, the program, the requirements of apprenticeship and their job requirements and benefits.

**LBST110 INTRODUCTION TO TRADE UNIONISM II.** The second half of the trade unionism class is designed to acquaint students with the union, labor history, parliamentary procedure, COMET and benefits.

**LBST120 INTRODUCTION TO TRADE UNIONISM III.** This final part of this course will focus on American Labor

History as well as job practices and your rights and responsibilities as a union member

**MATH150 CALCULATIONS I.** This course covers the various calculations required throughout the National Electrical Code Book (N.E.C.).

**MATH151 CALCULATIONS II.** This invigorating course covers the basics of ampacity, conduit fill and box fill. Through dynamic power point presentations and classroom exercises, the participant will gain exceptional working knowledge of these basic calculations.

**MATH152 CALCULATIONS III.** This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.

**SFTH110 SAFETY IN THE CONSTRUCTION TRADES (OSHA 30)** This course provides entry level construction workers with a general awareness on how to recognize and prevent hazards on a construction site. The training covers a variety of construction safety and health hazards that a worker may encounter at a construction site. Students earn OSHA30 certification.

**SFTH111 FIRST AID/CPR.** This comprehensive course is taught in a dynamic and hands-on way with industry-leading curriculum and content from the expert in occupational first aid training. This course provides participants with the vital knowledge they need to respond to a medical emergency effectively and efficiently.

**SFTH210 RIGGING AND HAND SIGNALS.** Participants will learn to prevent incidents that result in property damage, injury, and death, related to the rigging and signal-person duties of operation of cranes when used in construction, demolition, and maintenance. This day and a half training is for individuals who work under the supervision of a competent person and on a routine basis perform rigging work engaged in lifting loads other than rigging for special lifts, or the erection, dismantling, jumping or reconfiguring of cranes or all of these. This person is also trained to communicate guidance and direction to a crane operator in lifting, hoisting, moving, or releasing a load.

**SFTH211 HAZARDOUS LOCATIONS.** This course covers the fundamentals of electrical installations in hazardous locations. Students who complete the series will be able to recognize areas that are likely to be classified and to select and apply wiring methods and electrical equipment in those areas.

**TELE110 COPPER TRAINING I.** This sets the foundation of a copper-based structured cabling system

installation. The course begins with an overview of copper transmission principles, professionalism, life safety and general industry best practices, as related to copper.

**TELE112 FIBER OPTICS I.** This course provides an overview of how fiber optics are used throughout the electrical industry for communication systems, electrical controls, sensing, lighting devices and numerous other applications.

**TELE120 TELEPHONY.** This course begins with a basic understanding of the telephone and its circuitry and then explores the various types of signals used to transmit data. Students will explore the differences from individual telephones to electro-mechanical key systems to electric key systems.

**TELE121 TELEPHONE SWITCHES I.** Many telephone systems are connected or networked by cable and switches. Prospective telephone technicians learn to design, install and repair telephone networks and switches in this course.

**TELE122 PATHWAYS AND SPACES.** This course covers the complex ANSI/TIA/EIA-569, Commercial Building Standard for Telecommunications Pathways and Spaces. The course offers a mix of conceptual and procedural learning experiences through reading and user interactivity. The course covers the telecommunications aspect of commercial building construction and design. It defines pathways, from horizontal to backbone to workstation and more. It also describes the types of labeling and coding that must be followed, and explains how cables must be marked according to the cable category.

**TELE210 COPPER TRAINING II.** A significant amount of course time will then be spent on BICSI best practices for the installation, termination, testing and retrofitting of copper cable.

**TELE211 COPPER TRAINING III.** Topics covered will include BICSI best practices for pathways and spaces; grounding, bonding and protection; and firestopping.

**TELE220 FIBER OPTICS II.** This course familiarizes the student with standards and practices that surround the fiber optics system.

**TELE221 FIBER OPTICS III.** This final course in fiber optics looks at manufacturer's specifications, the NEC requirements and troubleshooting fiber optics installations.

**TELE227 TELEPHONE SWITCHES II.** Students study circuitry and telephone equipment, various types of cable and diagrams of cable networks. Additionally, students develop the skills to trouble shoot and repair telephone switches and cable.

TELE228 FIRESTOPPING. This course introduces the student to firestopping: statistics, and terminology, penetration types, penetrating items, and materials penetrated which require a firestop system, products and materials that make up a firestop system, testing parameters, results, and guidelines which affect firestop ratings, engineered judgments, manufacturer and industry resources.

TELE229 LOCAL AREA NETWORKS. In this course, you will learn how to install, operate, configure, and verify a basic IPv4 and IPv6 network. You will focus on configuring a LAN switch, configuring an IP router, identifying basic security threats, understanding redundant topologies, troubleshooting common network issues, connecting to a wide-area network (WAN), configuring EIGRP and OSPF in both IPv4 and IPv6, understanding

WAN technologies, and getting familiar with device management.

TELE230 CCTV. This course informs installers about CCTV so they can make intelligent decisions about when and how to use CCTV and how it integrates into the overall security system. The course explains how to design a system, specify functions and features and choose hardware.

TELE231 AUDIO VISUAL INSTALLATIONS. Students will examine various audio visual technologies for home entertainment systems. Students will examine equipment and technologies and learn how they fit together for home theaters and other types of residential and commercial AV systems.

## **Administration and Faculty**

**Michael Neill**, Director of Apprentice Training; NTI Univ. of Tennessee/University of Michigan

**Jerry Coyle**, Assistant Director/Instructor; BS Finance/Marketing St. Joseph College Indiana; NTI University of Tennessee/University of Michigan

**Brian Myers**, Assistant Director /Instructor ; NTI University of Tennessee/University of Michigan; Member of NFPA 70/NEC Code Making Panel 17.

**James T. Dollard Jr.**, Coordinator of Safety; NTI University of Tennessee/University of Michigan; OSHA 500 Authorized Trainer; NPFA 70E Authorized Trainer;/; NFPA 70/NEC Code Correlating Committee Member

**Iggy Fletcher**, Instructor; AAS/Electrical Spring Garden College; NTI University of Tennessee/University of Michigan; OSHA 500 Authorized Trainer; NFPA 70 E Trainer

**Todd Neilson**, Instructor; NTI University of Tennessee/University of Michigan; Authorized OSHA 500 Trainer; NFPA 70 E Authorized Trainer

**Tom Noreski**, Instructor; NTI University of Tennessee/University of Michigan; OSHA 500 Authorized Trainer; BICSI Certified Trainer; NFPA 70 E Trainer; NCCCO Rigger Certification

**Mark Urban**, Instructor; BS Electrical Engineering Drexel University; NTI University of Tennessee/University of Michigan.

**Jackie Kubacki**, Administrative Secretary

**Ashley Barrett**, Administrative Secretary

**Dawn McCarry**, Administrative/Bookkeeper

**Betsy Mulgrew**, Receptionist

*Additionally, programs often use part-time staff or subject matter experts for specialty classes.*

**Appendix A**  
**Rules and Regulations**

**RULES AND REGULATIONS OF THE COMMITTEE  
FOR APPRENTICE TRAINING FOR THE ELECTRICAL INDUSTRY**

Apprentice Training for the Electrical Industry is sponsored by the Penn-Del-Jersey Chapter of the National Electrical Contractors Association and Local Union #98 of the International Brotherhood of Electrical Workers. The mission of the Committee for Apprentice Training for the Electrical Industry (“Committee”) is to lead the electrical industry by providing the best possible training to secure employment today and for the future.

The following Rules and Regulations apply to all Apprentices:

**1. SCHOOL ATTENDANCE**

- a. Each Apprentice must attend school on the day he or she is assigned, unless authorized in advance by the Director. Classes begin promptly at 7:00 A.M.
- b. *Election Day and Labor Day are considered to be school days at which attendance at school or as assigned is required.*

**2. ENTERING AND EXITING THE SCHOOL**

Apprentices must enter and leave the school through the rear door only. Each violation of this rule will delay advancement *by* 168 hours.

**3. PARKING**

Apprentices are *not* permitted to park any vehicle on the school parking lot. Each violation of this rule will delay advancement *by* 168 hours.

**4. SCHOOL CLOSING DUE TO INCLEMENT WEATHER**

In case of inclement weather, listen to KYW 1060 *radio* for school closing information – the *SCHOOL CLOSING NUMBER* is 2031.

**5. CHANGE OF ADDRESS AND TELEPHONE NUMBER**

Written notification must be presented to the Director.

**6. CHANGE OF EMPLOYER**

- a. Apprentices are *not permitted* to quit working for an employer.

- b. *An Apprentices* must report to the Business Manager and the Training Director the next working day following departure from *employment with an employer*. Failure to comply with this rule will delay advancement *by 168 hours*.
- c. *An Apprentices* must notify the Director within 24 hours after reporting to a new employer. Failure to comply with this rule will delay advancement *by 168 hours*.
- d. An Apprentice *is not permitted to* work outside the jurisdiction of Local Union #98 without the express permission of the Business Manager.

## **7. DRUGS AND ALCOHOL**

- a. Apprentices will *be required to submit to a random drug and alcohol urinalysis screening test done within their probationary period (first 2000 on-the-job hours)*.
- b. Any Apprentice who tests positive for drug, chemical substance or alcohol abuse *during his/her probationary period* will be immediately removed from the program.
- c. *An apprentice who tests positive for drug, chemical substance or alcohol abuse after his initial probationary period will be sent to counseling and will be suspended from the apprenticeship program for one year. Any such apprentice will continue to be subject to random drug testing throughout the remainder of the apprenticeship. Should such apprentice again test positive, that apprentice will be terminated from the apprenticeship program.*
- d. Any Apprentice, at *his or her own expense*, has the right to have their same urine sample retested and evaluated by a state licensed independent laboratory and will be provided a reasonable opportunity to rebut or explain the test results.
- e. Anyone found using or bringing alcoholic beverages into the school will be subject to disciplinary action.
- f. Anyone found using or possessing illegal or controlled substances will be subject to disciplinary action.

## **8 (A). ABSENCE - DEFINED**

- a. Any apprentice will be considered absent from school if he or she does not show up for school on their assigned school day.
- b. Any apprentice will be considered absent from school if he or she does not attend school for at least three full school periods on their assigned

school day.

**8(B). LATENESS - DEFINED**

- a. Arriving in class after 7:00 A.M.
- b. Returning to class late after lunch period.
- c. Returning to class late after break period.
- d. Sleeping in class.
- e. Leaving class before dismissal by the instructor.
- f. Removal from class for failure to have completed a homework assignment.
- g. *Use of any cell phone, beeper or other electronic device during class. All such cell phones, beepers or electronic devices must be turned off during class.*
- h. *Failure to remain current in the payment of dues.*

*There is no acceptable "excuses" for leaving the classroom before dismissal by the instructor, other than to use the toilet facilities or illness.*

**9. PENALTIES LEVIED FOR EXCESSIVE SCHOOL ABSENCES AND/OR LATENESS**

- a. There are no excused absences.
- b. Two (2) *lates* constitutes one (1) absence.
- c. Two and one half (2 ½) absences - advancement delayed *by* 168 hours.
- d. Three (3) absences - advancement delayed *by an additional* 168 hours.
- e. Three and one half (3 ½) absences - advancement delayed *by an additional* 336 hours.
- f. Four (4) absences - advancement delayed *by an additional* 336 hours.
- g. Four and one half (4 ½) absences – advancement delayed *by an additional* 336 hours.

Total penalty hours *for absences are* as follows: 2 ½ *absences* = 168 hours, 3 *absences* = 336 hours, 3 ½ *absences* = 672 hours, 4 *absences* = 1008 hours, 4 ½ *absences* =1344 hours.

- h. Five (5) absences - immediate termination of apprenticeship. ***There is no appeal for being dismissed for five absences.***
- i. *An apprentice will not receive any compensation for a late or an absence.*
- j. ***All apprentices having 3 absences or a combination of absences and lates equaling 3 absences will have their school check(s) held till all their book money owed to ATEI is paid.***

## 10. WORK PROGRESS REPORTS

- a. Work Progress Reports must be signed by the Foreman and turned in to the Director no later than 4:30 P.M. of the 15th day of the *following* month. In the case of a disability, a work progress report must still be forwarded.
- b. Should an apprentice choose to mail the work report, the *report should* be addressed to:

A.T.E.I.  
1719 Spring Garden Street - 2nd Floor  
Philadelphia, PA 19130

## 11. PENALTIES LEVIED FOR FAILURE TO SUBMIT WORK PROGRESS REPORTS WITHIN THE PRESCRIBED TIME PERIOD

- a. *For each work report that is not received within the time prescribed (by the 15<sup>th</sup> day of the following month), advancement to the next pay grade will be delayed by 168 hours.*
- b. Three (3) delinquent work reports will subject the violator to an appearance before the Committee for appropriate action.
- c. Work report penalties may be worked off (excused) with the permission of the Director in the following manner: each individual penalty may be excused by the Director after the violator has performed a minimum of at least (4) hours of service to Local #98.

## 12. DRESS CODE:

- a. ***No open toe shoes (sandals)***
- b. ***No cut off shirts or tank tops***
- c. ***No wearing of hats except for medical or religious purposes***
- d. ***Undergarments must be completely covered by outside clothing***
- e. ***No garments that are vulgar, obscene or libelous***
- f. ***No garments that encourage illegal or violent activities***

***Any apprentice who violates the dress code will be asked to leave the building and will be given an absent for the day.***

**13. COMMUNITY SERVICE/PENALTY HOURS:**

***Any apprentice who volunteers for Community Service Projects can remove penalty hours.***

***All penalty hours except hours imposed for being absent or late from class can be removed. 1 hour of community service would equal 10 penalty hours removed.***

**14. SCHOOL GRADES**

- a. Minimum passing grade is 70.
- b. Any apprentice failing during the course of the year may be called before the Committee for an evaluation of *his/her* status in the program.
- c. In the case of an apprentice failing a complete term of school, the opportunity to repeat the failed term will be at the discretion of the Committee and under the terms listed below:
  1. Any apprentice failing a complete term of school will be penalized two thousand (2,000) hours which becomes effective from the first day of the month after the date of the failure. This penalty will be in addition to any other penalties incurred.
  2. Any apprentice repeating the term will not be compensated for school hours.
  3. Should an apprentice fail the same school year twice, the apprentice will be dismissed.

**15. LOSS OF EMPLOYMENT**

- a. *Any apprentice who is fired or laid off for reasons other than lack of work by his/her signatory contractor must appear before the Committee at the Committee's next scheduled meeting.*
- b. *Such apprentice will not be sent out to work until he/she appears before the Committee.*

**16. PROBATION**

- a. *If an apprentice is placed on probation by the Committee for any reason, including termination from employment and/or poor performance in school, the apprentice's work and school records will be reviewed monthly by the Committee.*

- b. *An apprentice placed on probation will be subject to a random drug and alcohol urinalysis screening test throughout the remainder of the apprenticeship.*

**17. ILLNESS OR INJURY**

- a. *If an apprentice is out-of-work as a result of a disability or a work-related injury for more than three (3) days, the apprentice must notify the Committee and provide a medical certificate or equivalent to support the apprentice's inability to work. Such medical certificate or equivalent must include a tentative return-to-work date.*
- b. *Any such apprentice who is out of work due to a disability or work-related injury for more than three (3) days must report any change in condition to the Committee.*

**I HAVE READ AND RECEIVED A COPY OF THE RULES AND REGULATIONS SET DOWN BY THE COMMITTEE FOR APPRENTICE TRAINING FOR THE ELECTRICAL INDUSTRY AND UNDERSTAND THAT ANY VIOLATION OF THESE SAME RULES AND REGULATIONS WILL CAUSE ME TO INCUR THE DESCRIBED PENALTIES, INCLUDING TERMINATION.**

**I ALSO UNDERSTAND AND AGREE THAT THE COMMITTEE HAS THE RIGHT TO AMEND, MODIFY OR CHANGE THESE RULES AND REGULATIONS FROM TIME TO TIME AS THE COMMITTEE DEEMS NECESSARY.**

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

SOCIAL SECURITY NUMBER: \_\_\_\_\_

**Appendix B**  
**Enrollment Agreement**

**ENROLLMENT AGREEMENT**  
**Electrician**

ATEI  
1719 Spring Garden Street  
Philadelphia, PA 19130  
215-567-6405  
www.atei98.org

This is an agreement between the Apprenticeship Training for the Electrical Industry (ATEI) and Student Name: \_\_\_\_\_ to enroll in the Electrician Wireman Program. This program consists of 1080 clock hours of classroom and laboratory instruction and 8000 hours on-the-job training for a total of 9080 hours over a five-year period. At the end of this program you will receive an apprenticeship completion certificate from the United States Department of Labor and will become a journey worker in the electrical field. You will also receive a diploma from the Pennsylvania Board of Private Licensed Schools. There are no tuition or fee costs for this program. Students will be provided tools at no cost. This program begins in October \_\_\_\_\_ (Year). Your estimated completion date is June \_\_\_\_\_ (Year).

Should you decide to leave the program or if you are asked to leave the program, please refer to the policies and procedures regarding termination that can be found in the Student Handbook and Catalog. Since there are no tuition charges for this program, there will be no refund due to the student. The one-time \$40 application fee is non-refundable.

At the end of the program, you will become eligible for employment through the International Brotherhood of Electrical Workers, Local Union 98. **PERMANENT EMPLOYMENT CANNOT BE GUARANTEED.** However you will be part of an employment placement service through the union that will be available to you until you retire.

Should you have any questions or concerns regarding this enrollment agreement, please contact Michael Neil, Director of the ATEI. A copy of the ATEI complaint procedure can be found in the Student Handbook and Catalog. Questions or concerns that are not satisfactorily resolved by the school or through the complaint procedure should be addressed to:

State Board of Private Licensed Schools  
Pennsylvania Department of Education  
333 Market Street, 12<sup>th</sup> Floor  
Harrisburg, PA 17126-0333

By signing this document, I certify to the following: that I have received and read the ATEI Student Handbook and Catalog and I further certify that I have read and understand this enrollment agreement.

This agreement is effective this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Student

\_\_\_\_\_  
School Representative

**ENROLLMENT AGREEMENT**  
**Telecommunications Installer**

ATEI  
1719 Spring Garden Street  
Philadelphia, PA 19130  
215-567-6405  
www.atei98.org

This is an agreement between the Apprenticeship Training for the Electrical Industry (ATEI) and Student Name: \_\_\_\_\_ to enroll in the Telecommunications Installer Program. This program consists of 640 clock hours of classroom and laboratory instruction and 8000 hours on-the-job training for a total of 8640 hours over a four-year period. At the end of this program you will receive an apprenticeship completion certificate from the United States Department of Labor and will become a journey worker in the telecommunications field. You will also receive a diploma from the Pennsylvania Board of Private Licensed Schools. There are no tuition or fee costs for this program. Students are provided tools at no cost. This program begins in February \_\_\_\_\_ (Year). Your estimated completion date is December \_\_\_\_\_ (Year).

Should you decide to leave the program or if you are asked to leave the program, please refer to the policies and procedures regarding termination that can be found in the Student Handbook and Catalog. Since there are no tuition charges for this program, there will be no refund due to the student. The one-time \$40 application fee is non-refundable.

At the end of the program, you will become eligible for employment through the International Brotherhood of Electrical Workers, Local Union 98. **PERMANENT EMPLOYMENT CANNOT BE GUARANTEED.** However you will be part of an employment placement service through the union that will be available to you until you retire.

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\_\_\_\_\_  
Student

\_\_\_\_\_  
School Representative