

Name: [Click here to enter text.](#)      Date: [Click here to enter a date.](#)      Year of Relevant Catalog: [Click here to enter text.](#)

## Technical Education Courses

Fall Semester				Spring Semester			
Course Title		Status	Credits	Course Title		Status	Credits
ENV 102	Safety Orientation (OSHA 10)		3	ELT 140	National Electrical Code I <b>(Pre-req: ELT 101, 111, and 108)</b>		3
ELT 101	Introductory Craft Skills		3	ELT 141	National Electrical Code II <b>(Pre-req: ELT 104)</b>		3
ELT 107	AC/DC Circuits		3	ELT 160	Commercial Wiring <b>(Pre-req: ELT 108 &amp; 140)</b>		3
ELT 108	Blueprint Reading <b>(Core-req: ELT 101)</b>		3	ELT 260	Journeyman Exam Prep <b>(Pre-req: ELT 111, 140, 141, 160 &amp; 210)</b>		3
ELT 111	Residential Wiring <b>(Pre-req: ELT 108)</b>		3	ENG 100	Tech Writing		3
MAT 101	Technical Math		3				
<b>Semester Total</b>			<b>17</b>	<b>Semester Total</b>			<b>19</b>
<b>Total Technical Certificate Hours</b>							<b>36</b>

**All courses listed with a prerequisite required must be passed with a C or better before moving on to the next course**

### PROGRAM OUTCOMES

- Exhibit professionalism.
- Demonstrate employability skills.
- Demonstrate competency in residential, commercial, and industrial installation and maintenance.
- Communicate effectively.
- Calculate accurately.
- Use appropriate electrical terminology.
- Interpret blueprints, diagrams, and schematics.
- Locate and comprehend the appropriate electrical code(s) for the objective to be accomplished safely.

### GENERAL EDUCATION PROGRAM OUTCOMES

- Compose coherent written communication.
- Deliver coherent oral communication.
- Show proficiency in locating, analyzing, documenting, and ethically using information sources.
- Perform and interpret calculations.
- Develop logical problem-solving skills and/or critical thinking skills.
- Identify appropriate strategies for gathering, analyzing, and displaying data to draw conclusions from scientific data.
- Collaborate effectively, which cultivates a respect for human diversity.

Demonstrate technology literacy appropriate to area of study.

## Associate of Applied Science Degree

Requirements		Status	Credits
<b>Technical Certificate</b>			
Certificate, Electrical Technology			36
<b>Related Electives</b>			
			15
<b>General Education Courses</b>			
<b>Written Communications (3 credit hours)</b>			
ENG 100	Technical Writing		3
ENG 101	English Composition I		3
ENG 102	English Composition II		3
<b>Verbal Communications (3 credit hours)</b>			
COM 102	Interpersonal Communication		3
COM 105	Public Speaking		3
<b>Mathematics (3 credit hours)</b>			
MAT 101	Technical Math		3
MAT 105	Intermediate Algebra		3
MAT 150	College Algebra		3
<b>Computer Science (3 credit hours)</b>			
CSA 105	Introduction to Computer Applications and Concepts		3
CSA 110	Introduction to Computer Programming		3
<b>Social Sciences, and/or Humanities and Fine Arts (3 credit hours)</b>			
HUM 101	Ethics in the Workplace		3
PSY 101	General Psychology		3
		<b>Technical Certificate</b>	<b>36</b>
		<b>Related Electives</b>	<b>15</b>
		<b>General Education</b>	<b>9</b>
		<b>Total AAS Credits</b>	<b>60</b>

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Student Signature

\_\_\_\_\_  
Advisor

The physical demands described here are representative of those that must be met by a student to successfully perform the essential functions of working in this field. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this program, the student is regularly required to stand, walk, and talk or hear. The student frequently is required to sit and use hands to handle or feel. The student is occasionally required to reach with hands and arms; climb or balance; and stoop, kneel, crouch, or crawl. The student must work in various weather conditions such as excessive heat or cold. The student must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this field include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

### ELECTRICAL TECHNOLOGY

#### ELT 101 Introductory Craft Skills

3 credits (2:2)

This course follows the NCCER modules for: Basic Safety, Introduction to Construction Math, Introduction to Hand Tools, Introduction to Power Tools, and Introduction to Blueprints, Basic Rigging, Basic Communication Skills, and Basic Employability Skills.

**ELT 107 AC/DC Circuits**

4 credits (2:4)

This course is an introduction to electrical and electronic components, symbols, and the global language used in electrical and electronics. Students receive computer-based, modular training simultaneously with practical experience reading schematic diagrams, constructing circuits, and test procedures of operating characteristics used in AC/ DC circuits. Students will measure frequency and voltages with meters and oscilloscopes and learn about frequency reactive devices.

**ELT 108 Blueprint Reading**

2 credits (1:2)

(Corequisite: ELT 101)

This course will cover all the symbols and schematics needed for an electrician to correctly install, maintain, and troubleshoot residential, commercial, or industrial wiring, according to plans and electrical equipment.

**ELT 111 Residential Wiring**

4 credits (2:4)

(Prerequisite: ELT 108)

This course will cover the basics of residential electrical wiring. Students will learn both theory of electricity, as well as how to install and troubleshoot wiring problems.

**ELT 140 National Electrical Code I**

4 credits (4:0)

(Prerequisites: ELT 101, 111, and ELT 108.)

This course covers the first part of the National Electrical Code on residential and commercial wiring. This will include definitions, requirements for electrical installation, wiring design and protection, methods and materials, and equipment for general use.

**ELT 141 National Electrical Code II**

4 credits (4:0)

(Prerequisite: ELT 140)

This course covers the second part of the National Electrical Code on industrial wiring. This will include definitions, requirements for electrical installation, wiring design and protection, methods and materials, and equipment for general use, including lighting requirements.

**ELT 150 Transformers**

2 credits (1:2)

(Prerequisite: ELT 107)

In this course, students will learn the basic electrical and magnetic principles as applied to transformers, as well as advanced principles of transformer operations. The course will also cover safety, standards for electrical devices, maintenance, and troubleshooting.

**ELT 160 Commercial Wiring**

4 credits (2:4)

(Prerequisite: ELT 108, 140)

This course covers all aspects of commercial wiring. Included in this course will be the reading of commercial blueprints, application of knowledge to hands-on applications of commercial wiring techniques, and safety.

**ELT 170 Lab / OJT**

0 credits

Apply classroom knowledge to an actual work situation. OJT/Internship will provide students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff, and each student to provide a variety of actual job experiences directly related to the student's career goals.

**ELT 210 Industrial Wiring**

4 credits (2:4)

(Prerequisites: ELT 107, ELT 160)

This course covers all aspects of industrial wiring. Included in this course will be the reading of industrial blueprints, application of knowledge to hands-on applications of industrial wiring techniques, safety, conduit bending and systems, and sizing of feeders and circuits for motor systems.

**ELT 220 Motor Control**

4 credits (2:4)

(Prerequisites: ELT 107, ELT 160)

Students will learn construction and operation of pilot devices, motor starters, control circuits, single-phase, and three-phase motors. Basic motor control circuits are constructed from a schematic or ladder diagram. Students will troubleshoot basic motor control circuits and study current and overload protection for motors.

**ELT 225 Programmable Logic Control**

3 credits (2:2)

(Prerequisite: ELT 107, ELT 220)

This course will cover additional motor control features, such as programmable logic controllers (PLCs), relays, timers, sensing devices, system integration, and preventive maintenance and troubleshooting.

### **ELT 250 Generators and Emergency Systems**

3 credits (1:4)

(Prerequisite: ELT 210, Corequisite: ELT 225)

Students will work with the installation, termination, and testing of various voice, data, and video cabling systems. They will understand the installation of electric circuits in health care facilities, including the requirements for life safety and critical circuits. In addition, the course covers the NEC requirements for electric generators and storage batteries. Fire alarm control units, Digital Alarm Communicator Systems (DACS), wiring for alarm initiating and notification devices, and alarm system maintenance will also be covered.

### **ELT 255 Advanced Automation & Controls**

2 credits (2:2)

Upon completion of the course, students will have a comprehensive overview of applications and operating principles of solid-state controls, reducing-voltage starters, and adjustable frequency drives. The course covers a basic overview of HVAC systems and their controls, electrical troubleshooting and NEC requirements.

### **ELT 260 Journeyman Exam Prep**

4 credits (4:0)

(Prerequisites: ELT 111, ELT 140, ELT 141, ELT 160, and ELT 210.)

This course will prepare the student to take the Journeyman Electrician Exam. The course will cover all components of the exam—terminology, formulas, wiring methods, over current protection, calculations and sample examinations.

### **ELT 271 OJT / Internship**

0 credits

Apply classroom knowledge to an actual work situation. OJT/Internship will provide students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff, and each student to provide a variety of actual job experiences directly related to the student's career goals.