

# 2023-2024 TTC Catalog - Electrical Line Worker (ELW)

---

## ELW 110 - Electrical Computations

**Lec:** 1.0 **Lab:** 3.0 **Credit:** 2.0

### Course Offered

Fall  
Spring

This course introduces the fundamental applications of mathematics that are used by an electrical line technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas and usage of a scientific calculator.

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## ELW 111 - Introduction to Electrical Line Worker

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### Course Offered

Fall  
Spring

This course introduces basic principles of electricity, safety standards and basic line worker tools. Topics include electrical distribution systems and components, line installation and maintenance applications.

### Prerequisite

ELW 110

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## ELW 112 - Introduction to Electricity

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### Course Offered

Fall  
Spring

This course introduces the fundamental concepts of electricity and test equipment to non-electrical/electronics majors. Topics include basic DC and AC principles, components and operation of test equipment.

**Prerequisite**

ELW 110

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 113 - National Electrical Safety Code**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

This course covers the use of the current National Electrical Safety Code. Topics include terms, basic components meters, overhead and underground line construction and maintenance procedures.

**Prerequisite**

ELW 112

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 114 - Overhead Line Construction I**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Fall

Spring

This course introduces the basics of overhead power line construction. Topics include safe work habits, protective equipment and pole-climbing techniques.

**Prerequisite**

ELW 111

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 115 - Overhead Line Construction II**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Summer

This course introduces overhead line maintenance, construction, and framing as well as the safe working practices and procedures for working off a pole using hooks.

**Prerequisite**

ELW 114

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

**ELW 116 - Overhead Line Construction III**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Summer

This course introduces the phase of energized line work, including the use of aerial lifts and the application of rubber protective equipment.

**Prerequisite**

ELW 115

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

**ELW 117 - Overhead Line Construction IV**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Summer

This course introduces regulators, transformer connections, reclosures, fuses, lightning arresters and troubleshooting of primary and secondary outages.

**Prerequisite**

ELW 116

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

**ELW 211 - Underground Line Construction I**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Fall

Spring

This course introduces underground line distribution systems, including terminators, elbows, transformers, underground installations and safety practices.

**Prerequisite**

ELW 111

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 212 - Underground Line Construction II**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Summer

This course covers troubleshooting of underground systems and associated equipment including fault locating, single and three-phase enclosures, and overhead/underground terminations.

**Prerequisite**

ELW 211

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 221 - Advanced Line Construction**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

**Course Offered**

Summer

This course introduces advanced line construction concepts, including worksite safety practices, excavations, digital paneling for regulators and reclosure, lightning protection and traffic control devices.

**Prerequisite**

ELW 117

and

ELW 212

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---

## **ELW 231 - Electrical Power Systems**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Fall

Spring

This course covers the basic principles of electrical power systems, including transmission lines, generator and transformer characteristics, fault detection and correction, interpretation of line diagrams, and performance of per unit calculations for circuit performance analysis.

### **Prerequisite**

ELW 112

**Grade Type:** Letter Grade

**Division:** Engineering and Construction

---