

# ELECTRICAL PROGRAMS

## ELWK - Electrical Lineworker

### ELWK 130. Introduction to Electrical Power Systems 2 Credits (2)

An overview of electrical power systems, equipment, safety practices, first aid and CPR. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.

**Corequisite:** OEET 110, OEET 131.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose electrical power systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.
8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

### ELWK 131. Electrical Lineworker Lab I 6 Credits (12P)

Climbing and work on utility poles using ropes and rigging, pole setting and an introduction to transmission and distribution line construction. Maintenance and troubleshooting to include the use of hot sticks. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.

**Corequisite:** OEET 110, OEET 130.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose electrical power systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.

8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

### ELWK 140. Electrical Power Systems II 3 Credits (2+2P)

Theory of power generation and distribution with emphasis on three phase systems to include transformers, voltage regulators, surge arrestors. Includes troubleshooting. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.

**Corequisite:** OEET 141.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose electrical systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.
8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

### ELWK 141. Electrical Lineworker II 6 Credits (12P)

Practice in the installation of electrical power lines including transformers, voltage regulators, and surge arrestors. Also advanced hot sticking procedures, troubleshooting, underground systems procedures, and pole-top rescue. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.

**Corequisite:** OEET 140.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose electrical power systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.

8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

**ELWK 221. Cooperative Experience I**

**1-4 Credits (1-4)**

Supervised cooperative work program. Student is employed in an approved occupation and is supervised and rated by the employer and instructor. Student will meet in a weekly class. May be repeated up to 4 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

**Prerequisite(s):** Consent of instructor.

## **OEET - Electrical Trades**

**OEET 110. Basic Electricity and Electronics**

**4 Credits (3+3P)**

An introduction to electricity theory and practice, including electron theory, Ohm's law, construction of electrical circuits, direct and alternating currents, magnetism, transformers, and practical applications. Same as HVAC 102, ELT 105, OEPB 102.

**OEET 120. Basic Motor Controls**

**5 Credits (2+6P)**

Developing schematics and wiring simple manual and electromechanical control devices.

**Prerequisite:** OEET 110 or consent of instructor.

**OEET 205. National Electric Code**

**3 Credits (3)**

Interpretation and application of the National Electric Code.

**Prerequisite:** OEET 110.

**OEET 251. Electrical Apprenticeship V**

**6 Credits (6)**

Commercial/industrial applications for electricians. Blueprint interpretation, commercial construction types and processes, wiring methods, wiring materials, and motor controls.

**Prerequisites:** OEET 154 and consent of instructor.

**OEET 252. Electrical Apprenticeship VI**

**6 Credits (6)**

In-depth commercial applications to include commercial/industrial service calculations, mobile home parks, multi-family dwellings, and commercial fire/security systems.

**Prerequisites:** OEET 251 and consent of instructor.

**OEET 253. Electrical Apprenticeship VII**

**6 Credits (6)**

Control devices in commercial/industrial applications; emphasis on logic in-line diagrams, time delay starters, reversing starters, and manual/magnetic solenoids.

**Prerequisites:** OEET 252 and consent of instructor.

**OEET 254. Electrical Apprenticeship VIII**

**6 Credits (6)**

Miscellaneous topics for the journeyman electrician to include power distribution/transmission, solid state controls and relays, photoelectric and proximity controls and programmable controllers.

**Prerequisites:** OEET 253 and consent of instructor.

**OEET 295. Special Topics**

**1-6 Credits**

Topics to be announced in the Schedule of Classes.