

# Electrical Level 1



Orientation to the Electrical Trade 26101-14



# Objectives

**When trainees have completed this session, they should be able to do the following:**

1. Describe the apprenticeship/training process for electricians.
2. Describe various career paths/opportunities one might follow in the electrical trade.
3. Define the various sectors of the electrical industry.
4. State the tasks typically performed by an electrician.
5. Explain the responsibilities and aptitudes of an electrician.

This is a knowledge-based module; there are no Performance Tasks.



# 1.0.0 – 1.1.0

## Residential Wiring



(A) PAD-MOUNTED TRANSFORMER



(B) RESIDENTIAL ELECTRICAL SERVICE



(C) DEVICE BOX



(D) NONMETALLIC-SHEATHED CABLE



(E) INTERIOR PANEL (SUBPANEL)



(F) LUMINAIRE

26101-14\_F01.EPS



# 1.2.0

## Commercial Wiring



(A) PAD-MOUNTED COMMERCIAL TRANSFORMER



(B) COMMERCIAL ELECTRICAL SERVICE



(C) CONDUIT SYSTEM



(D) FIRE ALARM SYSTEM



(E) OFFICE LIGHTING



(F) OUTDOOR LIGHTING

26101-14\_F02.EPS

# 1.3.0

## Industrial Wiring



(A) DISTRIBUTION SWITCHGEAR



(B) RIGID CONDUIT SYSTEM



(C) MOTOR CONTROL CENTER

26101-14\_F03.EPS



## 2.0.0 – 2.2.0

# Career Opportunities in the Electrical Field



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- Skilled electricians are in high demand to install, maintain, and troubleshoot electrical systems and equipment.
- On-the-job learning (OJL) provides an opportunity to earn as you learn.
- Many trainees begin by installing residential wiring.

## 2.3.0



26101-14\_F05.EPS

# Commercial Electrician

- Commercial electricians install wiring in apartment buildings, stores, offices, service stations, and hospitals.
- Commercial buildings are typically metal-frame construction.



## 2.4.0

# Industrial Electrician

- Industrial electricians may require additional training in three-phase power, motors, motor control systems, and instrumentation.
- Industrial electricians may also work in hazardous locations.

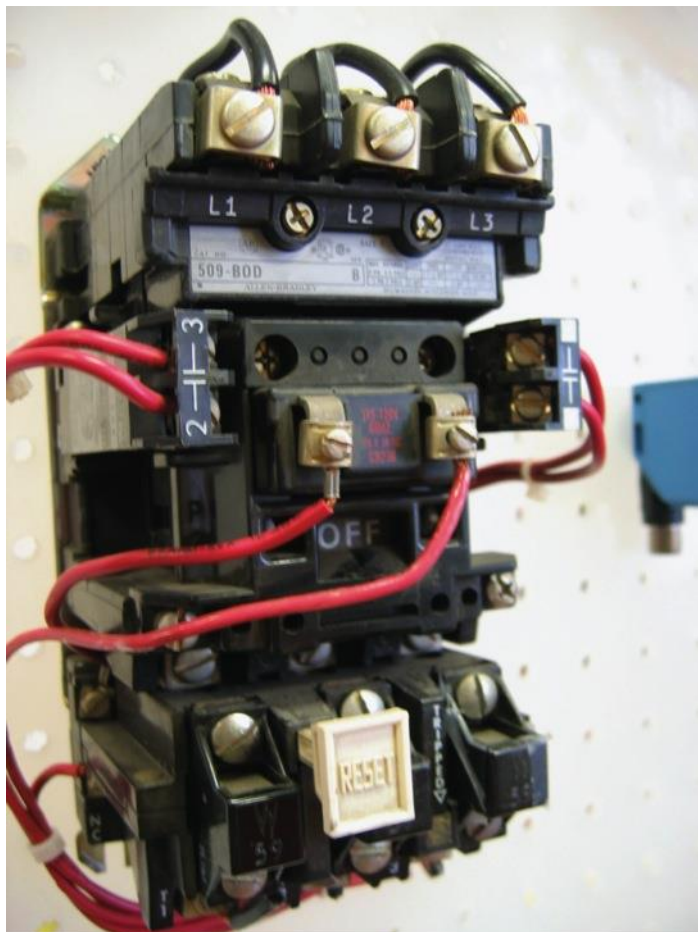


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## 2.5.0

# Electrical Maintenance Technician



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- Electrical maintenance technicians are typically employed by large facilities to service the electrical and instrumentation systems.
- Electrical maintenance personnel service and repair equipment such as magnetic motor starters.

# Your Training Program

- An electrical apprenticeship typically requires four years of training, including 576 classroom hours and 8,000 hours of OJL.
- NCCER training is competency-based, which means that the trainee must demonstrate the skills presented in each module of training.
- A record of each trainee's progress is maintained in a National Registry.



# Employee/Employer Responsibilities

- Professionals are honest and dependable. They take responsibility for their mistakes and are willing to learn from them.
- Employers must provide and maintain a safe workplace.



# 6.0.0



26101-14\_F08.EPS

## Safety

Employees must follow all rules for working procedures/practices, report any unsafe equipment and conditions, and wear all appropriate PPE.



# Wrap Up

## 3-2-1

- 3 – Write 3 important things learned during class
- 2 – Write 2 questions you have about the material
- 1 – Write 1 thought you had about the material



# Next Session...

## MODULE EXAM

Review the complete module to prepare for the module exam. Complete the Module Review as a study aid.

