

# Electrical and Security Systems (2023)

The following competencies are to be taught within ALL application level courses offered in your school's approved pathway. 0

- 1 Demonstrate an understanding of industry standards for personal safety including the safe use of tools, equipment, and hazardous materials. 0.1
- 2 Demonstrate time management skills. 0.2
- 3 Create and utilize employment documents including a resume and portfolio. 0.3
- 4 Demonstrate job seeking and interview skills. 0.4
- 5 Understand and respond to performance reviews. 0.5

## Benchmark 1 1

- 1 Cut, ream, thread, and bend conduit. 1.1
- 2 Compute branch circuit loads and explain installation requirements. 1.2
- 3 Demonstrate the procedure for safely using a clamp-on ammeter and a voltage tester. 1.3
- 4 Demonstrate procedures for installing raceways and boxes. 1.4
- 5 Demonstrate ability to correctly pull wire through conduit. 1.5
- 6 Select and install appropriate service entrance equipment according to codes. 1.6
- 7 Demonstrate the ability to properly ground electrical circuits according to codes. 1.7
- 8 Install breakers, plugs, and switches. 1.8
- 9 Explain basic characteristics of series and parallel circuits. 1.9
- 10 Recognize and install various types of lighting fixtures. 1.10
- 11 Describe characteristics and functions of various fire alarm systems. 1.11
- 12 Describe characteristics and functions of various security and burglar alarm systems. 1.12
- 13 Describe the uses, characteristics, and theory of low voltage systems. 1.13

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**14 Demonstrate knowledge of the uses and installation process for Closed Circuit TV.** 1.14

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**15 Describe the components of and uses for electric lock hardware.** 1.15

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**16 Demonstrate safe use of electric hand and power tools.** 1.16

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**17 Understand and interact with LAN systems as a part of an overall security installation.** 1.17

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**18 Demonstrate ability to install a lightning protection system.** 1.18

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**19 Troubleshoot and repair problems in lighting fixtures, including ballast replacement.** 1.19