

Electricity I (8533/36 weeks)

Electricity I (8533/36 weeks) ELEC1

A Demonstrating Personal Qualities and Abilities ELEC1.1

- 1 Demonstrate creativity and innovation. ELEC1.1.1
 - 2 Demonstrate critical thinking and problem solving. ELEC1.1.2
 - 3 Demonstrate initiative and self-direction. ELEC1.1.3
 - 4 Demonstrate integrity. ELEC1.1.4
 - 5 Demonstrate work ethic. ELEC1.1.5
-

B Demonstrating Interpersonal Skills ELEC1.2

- 6 Demonstrate conflict-resolution skills. ELEC1.2.6
 - 7 Demonstrate listening and speaking skills. ELEC1.2.7
 - 8 Demonstrate respect for diversity. ELEC1.2.8
 - 9 Demonstrate customer service skills. ELEC1.2.9
 - 10 Collaborate with team members. ELEC1.2.10
-

C Demonstrating Professional Competencies ELEC1.3

- 11 Demonstrate big-picture thinking. ELEC1.3.11
 - 12 Demonstrate career- and life-management skills. ELEC1.3.12
 - 13 Demonstrate continuous learning and adaptability. ELEC1.3.13
 - 14 Manage time and resources. ELEC1.3.14
 - 15 Demonstrate information-literacy skills. ELEC1.3.15
 - 16 Demonstrate an understanding of information security. ELEC1.3.16
 - 17 Maintain working knowledge of current information-technology (IT) systems. ELEC1.3.17
 - 18 Demonstrate proficiency with technologies, tools, and machines common to a specific occupation. ELEC1.3.18
 - 19 Apply mathematical skills to job-specific tasks. ELEC1.3.19
 - 20 Demonstrate professionalism. ELEC1.3.20
 - 21 Demonstrate reading and writing skills. ELEC1.3.21
 - 22 Demonstrate workplace safety. ELEC1.3.22
-

D Examining All Aspects of an Industry ELEC1.4

- 23 Examine aspects of planning within an industry/organization. [ELEC1.4.23](#)
 - 24 Examine aspects of management within an industry/organization. [ELEC1.4.24](#)
 - 25 Examine aspects of financial responsibility within an industry/organization. [ELEC1.4.25](#)
 - 26 Examine technical and production skills required of workers within an industry/organization. [ELEC1.4.26](#)
 - 27 Examine principles of technology that underlie an industry/organization. [ELEC1.4.27](#)
 - 28 Examine labor issues related to an industry/organization. [ELEC1.4.28](#)
 - 29 Examine community issues related to an industry/organization. [ELEC1.4.29](#)
 - 30 Examine health, safety, and environmental issues related to an industry/organization. [ELEC1.4.30](#)
-

E Addressing Elements of Student Life [ELEC1.5](#)

- 31 Identify the purposes and goals of the student organization. [ELEC1.5.31](#)
 - 32 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult. [ELEC1.5.32](#)
 - 33 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects. [ELEC1.5.33](#)
 - 34 Identify Internet safety issues and procedures for complying with acceptable use standards. [ELEC1.5.34](#)
-

F Exploring Work-Based Learning [ELEC1.6](#)

- 35 Identify the types of work-based learning (WBL) opportunities. [ELEC1.6.35](#)
 - 36 Reflect on lessons learned during the WBL experience. [ELEC1.6.36](#)
 - 37 Explore career opportunities related to the WBL experience. [ELEC1.6.37](#)
 - 38 Participate in a WBL experience, when appropriate. [ELEC1.6.38](#)
-

G Applying Basic Construction Safety Standards (Core Safety) [ELEC1.7](#)

- 39 Comply with federal, state, and local safety legal requirements. [ELEC1.7.39](#)
- 40 Maintain a safe working environment. [ELEC1.7.40](#)
- 41 Explain safe working practices around electrical hazards. [ELEC1.7.41](#)
- 42 Identify emergency first aid procedures. [ELEC1.7.42](#)
- 43 Identify the types of fires and the methods used to extinguish them. [ELEC1.7.43](#)
- 44 Identify personal protective equipment (PPE) requirements. [ELEC1.7.44](#)
- 45 Inspect course-specific hand and power tools to visually identify defects. [ELEC1.7.45](#)
- 46 Demonstrate lifting and carrying techniques. [ELEC1.7.46](#)
- 47 Demonstrate laddering techniques. [ELEC1.7.47](#)

- 48 Demonstrate scaffolding techniques. [ELEC1.7.48](#)
 - 49 Demonstrate lockout/tagout procedures. [ELEC1.7.49](#)
 - 50 Report injuries. [ELEC1.7.50](#)
 - 51 Report personal, environmental, and equipment safety violations to the appropriate authority. [ELEC1.7.51](#)
 - 52 Earn the OSHA 10 card. [ELEC1.7.52](#)
 - 53 Pass safety exam. [ELEC1.7.53](#)
-

H Focusing on the Electrician's Profession [ELEC1.8](#)

- 54 Explain electrician-specific safety issues. [ELEC1.8.54](#)
 - 55 Discuss current topics in the industry. [ELEC1.8.55](#)
 - 56 Explore the various occupations available in electricity and related fields. [ELEC1.8.56](#)
 - 57 Investigate career opportunities in the electrical industry. [ELEC1.8.57](#)
 - 58 Investigate postsecondary training and licensing in the electricity field. [ELEC1.8.58](#)
 - 59 Describe the employee's role in ensuring the success of the electrical business. [ELEC1.8.59](#)
 - 60 Identify national and local trade organizations. [ELEC1.8.60](#)
-

I Using Tools and Materials [ELEC1.9](#)

- 61 Use the various types of hand tools used by electricians. [ELEC1.9.61](#)
 - 62 Use the various types of power tools used by electricians. [ELEC1.9.62](#)
 - 63 Identify commonly used materials by name and by regional variance of terminology. [ELEC1.9.63](#)
 - 64 Prepare a material inventory. [ELEC1.9.64](#)
-

J Applying Basic Electrical Theory [ELEC1.10](#)

- 65 Explain basic electrical theory. [ELEC1.10.65](#)
 - 66 Explain the relationship of electron theory to circuit design, using Ohm's Law. [ELEC1.10.66](#)
 - 67 Use a variety of meters to take readings. [ELEC1.10.67](#)
 - 68 Calculate series circuits. [ELEC1.10.68](#)
 - 69 Wire a series circuit. [ELEC1.10.69](#)
 - 70 Calculate parallel circuits. [ELEC1.10.70](#)
 - 71 Wire parallel circuits. [ELEC1.10.71](#)
-

K Solving Mathematical Problems Related to the Electrical Field [ELEC1.11](#)

- 72 Solve word problems involving whole numbers, fractions, and decimals. [ELEC1.11.72](#)

73 Solve algebraic formulas pertaining to electrical applications. [ELEC1.11.73](#)

74 Solve problems involving percentage, ratio, and proportion. [ELEC1.11.74](#)

75 Measure distances using scales and measuring devices. [ELEC1.11.75](#)

L Interpreting Prints and Specifications [ELEC1.12](#)

76 Draw electrical circuits. [ELEC1.12.76](#)

77 Read electrical construction drawings and specifications. [ELEC1.12.77](#)

M Navigating the NEC Book [ELEC1.13](#)

78 Explain the intent of the NEC. [ELEC1.13.78](#)

79 Interpret NEC requirements for electrical installation. [ELEC1.13.79](#)

N Selecting and Installing Conductors [ELEC1.14](#)

80 Identify various types of conductors and their associated applications. [ELEC1.14.80](#)

81 Install conductors. [ELEC1.14.81](#)

82 Terminate conductors with lugs, connectors, or terminals. [ELEC1.14.82](#)

O Identifying Panelboards and Switchboards [ELEC1.15](#)

83 Identify the purpose and location of overcurrent protective devices (OCPDs) and service entrance equipment. [ELEC1.15.83](#)

84 Explain principles of generating electricity. [ELEC1.15.84](#)

85 Explain principles of magnetism and electromagnetism. [ELEC1.15.85](#)

86 Identify the components of a typical stand-alone generator. [ELEC1.15.86](#)

P Exploring Environmentally Friendly Choices [ELEC1.16](#)

87 Identify energy-efficient equipment and methods. [ELEC1.16.87](#)

88 Explore the environmental effects of land use and site location for a proposed building project. [ELEC1.16.88](#)