

Electricity 2 (8534/36 weeks)

Electricity 2 (8534/36 weeks) ELEC2

A Demonstrating Personal Qualities and Abilities ELEC2.1

- 1 Demonstrate creativity and innovation. ELEC2.1.1
 - 2 Demonstrate critical thinking and problem solving. ELEC2.1.2
 - 3 Demonstrate initiative and self-direction. ELEC2.1.3
 - 4 Demonstrate integrity. ELEC2.1.4
 - 5 Demonstrate work ethic. ELEC2.1.5
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B Demonstrating Interpersonal Skills ELEC2.2

- 6 Demonstrate conflict-resolution skills. ELEC2.2.6
 - 7 Demonstrate listening and speaking skills. ELEC2.2.7
 - 8 Demonstrate respect for diversity. ELEC2.2.8
 - 9 Demonstrate customer service skills. ELEC2.2.9
 - 10 Collaborate with team members. ELEC2.2.10
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C Demonstrating Professional Competencies ELEC2.3

- 11 Demonstrate big-picture thinking. ELEC2.3.11
 - 12 Demonstrate career- and life-management skills. ELEC2.3.12
 - 13 Demonstrate continuous learning and adaptability. ELEC2.3.13
 - 14 Manage time and resources. ELEC2.3.14
 - 15 Demonstrate information-literacy skills. ELEC2.3.15
 - 16 Demonstrate an understanding of information security. ELEC2.3.16
 - 17 Maintain working knowledge of current information-technology (IT) systems. ELEC2.3.17
 - 18 Demonstrate proficiency with technologies, tools, and machines common to a specific occupation. ELEC2.3.18
 - 19 Apply mathematical skills to job-specific tasks. ELEC2.3.19
 - 20 Demonstrate professionalism. ELEC2.3.20
 - 21 Demonstrate reading and writing skills. ELEC2.3.21
 - 22 Demonstrate workplace safety. ELEC2.3.22
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D Examining All Aspects of an Industry ELEC2.4

- 23 Examine aspects of planning within an industry/organization. [ELEC2.4.23](#)
 - 24 Examine aspects of management within an industry/organization. [ELEC2.4.24](#)
 - 25 Examine aspects of financial responsibility within an industry/organization. [ELEC2.4.25](#)
 - 26 Examine technical and production skills required of workers within an industry/organization. [ELEC2.4.26](#)
 - 27 Examine principles of technology that underlie an industry/organization. [ELEC2.4.27](#)
 - 28 Examine labor issues related to an industry/organization. [ELEC2.4.28](#)
 - 29 Examine community issues related to an industry/organization. [ELEC2.4.29](#)
 - 30 Examine health, safety, and environmental issues related to an industry/organization. [ELEC2.4.30](#)
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E Addressing Elements of Student Life [ELEC2.5](#)

- 31 Identify the purposes and goals of the student organization. [ELEC2.5.31](#)
 - 32 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult. [ELEC2.5.32](#)
 - 33 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects. [ELEC2.5.33](#)
 - 34 Identify Internet safety issues and procedures for complying with acceptable use standards. [ELEC2.5.34](#)
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F Exploring Work-Based Learning [ELEC2.6](#)

- 35 Identify the types of work-based learning (WBL) opportunities. [ELEC2.6.35](#)
 - 36 Reflect on lessons learned during the WBL experience. [ELEC2.6.36](#)
 - 37 Explore career opportunities related to the WBL experience. [ELEC2.6.37](#)
 - 38 Participate in a WBL experience, when appropriate. [ELEC2.6.38](#)
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G Applying Basic Construction Safety Standards (Core Safety) [ELEC2.7](#)

- 39 Comply with federal, state, and local safety legal requirements. [ELEC2.7.39](#)
- 40 Maintain a safe working environment. [ELEC2.7.40](#)
- 41 Explain safe working practices around electrical hazards. [ELEC2.7.41](#)
- 42 Identify emergency first aid procedures. [ELEC2.7.42](#)
- 43 Identify the types of fires and the methods used to extinguish them. [ELEC2.7.43](#)
- 44 Identify personal protective equipment (PPE) requirements. [ELEC2.7.44](#)
- 45 Inspect course-specific hand and power tools to visually identify defects. [ELEC2.7.45](#)
- 46 Demonstrate lifting and carrying techniques. [ELEC2.7.46](#)
- 47 Demonstrate laddering techniques. [ELEC2.7.47](#)

- 48 Demonstrate scaffolding techniques. [ELEC2.7.48](#)
 - 49 Demonstrate lockout/tagout procedures. [ELEC2.7.49](#)
 - 50 Report injuries. [ELEC2.7.50](#)
 - 51 Report personal, environmental, and equipment safety violations to the appropriate authority. [ELEC2.7.51](#)
 - 52 Earn the OSHA 10 card. [ELEC2.7.52](#)
 - 53 Pass safety exam. [ELEC2.7.53](#)
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H Solving Mathematical Problems Related to the Electrical Field [ELEC2.8](#)

- 54 Solve problems using direct and inverse relationships. [ELEC2.8.54](#)
 - 55 Solve electrical problems using calculators. [ELEC2.8.55](#)
 - 56 Convert metric prefixes to their numerical equivalents and vice-versa. [ELEC2.8.56](#)
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I Applying Basic Electrical Theory [ELEC2.9](#)

- 57 Troubleshoot series circuits. [ELEC2.9.57](#)
 - 58 Troubleshoot parallel circuits. [ELEC2.9.58](#)
 - 59 Wire series-parallel (i.e., combination) circuits. [ELEC2.9.59](#)
 - 60 Calculate series-parallel (i.e., combination) circuits. [ELEC2.9.60](#)
 - 61 Troubleshoot series-parallel (i.e., combination) circuits. [ELEC2.9.61](#)
 - 62 Explain nameplate specifications related to motors, generators, and transformers. [ELEC2.9.62](#)
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J Applying the National Electrical Code (NEC) Book [ELEC2.10](#)

- 63 Interpret the NEC requirements for electrical installation. [ELEC2.10.63](#)
 - 64 Apply the NEC requirements for electrical installation. [ELEC2.10.64](#)
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K Identifying and Installing Conduits and Raceways [ELEC2.11](#)

- 65 Identify various conduits and raceways. [ELEC2.11.65](#)
 - 66 Select material and wiring support systems. [ELEC2.11.66](#)
 - 67 Install conduits. [ELEC2.11.67](#)
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L Examining Lighting Systems [ELEC2.12](#)

- 68 Install luminaires (i.e., light fixtures). [ELEC2.12.68](#)
 - 69 Explain the functions, operation, and characteristics of single-phase power systems. [ELEC2.12.69](#)
 - 70 Install power devices. [ELEC2.12.70](#)
 - 71 Create a circuit using single-pole, three-way, and four-way switching systems. [ELEC2.12.71](#)
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M Exploring Panelboards and Switchboards [ELEC2.13](#)

72 Identify basic components of service entrance equipment. [ELEC2.13.72](#)

73 Select OCPDs. [ELEC2.13.73](#)

74 Install OCPDs. [ELEC2.13.74](#)

75 Install various ground fault circuit interrupter (GFCI) and arc fault circuit interrupter (AFCI) devices. [ELEC2.13.75](#)

N Identifying and Installing Grounding Systems and Transformers [ELEC2.14](#)

76 Identify characteristics of grounding systems. [ELEC2.14.76](#)

77 Illustrate sizing, layout, and installation of grounding systems. [ELEC2.14.77](#)

78 Install transformers. [ELEC2.14.78](#)

O Investigating Environmentally Friendly Choices [ELEC2.15](#)

79 Explore design choices that reflect conservation and efficient use of materials for a proposed building project. [ELEC2.15.79](#)

80 Explore design choices that reflect conservation and efficient use of energy for a proposed building project. [ELEC2.15.80](#)

81 Explore design choices that reflect conservation and efficient use of water for a proposed building project. [ELEC2.15.81](#)

82 Explore design choices that can affect indoor air quality (IAQ) for a proposed building project. [ELEC2.15.82](#)