Virginia CTE

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

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

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

Skip to main content

:xamining 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

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

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

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

Skip to main content

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

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

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

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

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

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

Skip to main content

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