

LEVEL 1 LESSON PLAN—AT A GLANCE

Session	Quarter 1	Session	Quarter 2
1	Introduction Orientation Tools Safety <i>Electrical hazards and safe working practices</i> OSHA Construction Safety <i>Electrical Safety and PPE</i>	1	Electrical Fundamentals–Unit 5 <i>Electromagnetism</i>
2	OSHA Construction Safety Falls Ladders and Stairs Scaffolds	2	Electrical Fundamentals–Unit 6 <i>Uses of Electromagnetism</i>
3	Electrical Fundamentals–Unit 1 <i>Matter</i>	3	Electrical Fundamentals–Unit 7 <i>The Electrical Circuit</i>
4	Electrical Fundamentals–Unit 2 <i>Electron Theory</i>	4	Electrical Fundamentals–Unit 8 <i>Math</i>
5	Electrical Fundamentals–Unit 3 <i>Magnetism</i>	5	Electrical Fundamentals–Unit 9 <i>Electrical Formulas</i>
6	Electrical Fundamentals–Unit 4 <i>Electricity</i>	6	Electrical Fundamentals– Unit 10 <i>Series Circuits</i>
7	Digital Multimeter Principles <i>Chapters 1 through 4</i>	7	Electrical Fundamentals–Unit 11 <i>Parallel Circuits</i>
8	Digital Multimeter Principles <i>Chapters 5 through 9</i>	8	Electrical Fundamentals–Unit 12 <i>Series-Parallel Circuits</i>
9	Digital Multimeter Principles <i>Chapter 10</i>	9	Electrical Fundamentals–Unit 13 <i>Multiwire Circuits</i>
10	Digital Multimeter Principles <i>Review and Competency Test</i>	10	Lab/Activity <i>Instructor/Institution Choice</i>
11	Quarter 1 Review	11	Flex Training <i>Instructor/Institution Choice</i>
12	Quarter 1 Exam	12	Quarter 2 Review
13	Lab/Activity <i>3-4-way switching</i>	13	Quarter 2 Exam

LEVEL 1 LESSON PLAN—AT A GLANCE

Session	Quarter 3	Session	Quarter 4
1	Electrical Fundamentals–Unit 14 <i>The Electrical System</i>	1	Introduction to the <i>NEC</i> <i>How to Use the NEC (Video)</i>
2	Electrical Fundamentals–Unit 15 <i>Protection Devices</i>	2	Apprenticeship Supplement <i>Articles 90 and 100</i>
3	Electrical Fundamentals–Unit 16 <i>Alternating Current</i>	3	Apprenticeship Supplement <i>Article 110</i>
4	Electrical Fundamentals–Unit 17 <i>Capacitance</i>	4	AC/DC Fundamentals <i>Review</i>
5	Electrical Fundamentals–Unit 18 <i>Inductance</i>	5	Apprenticeship Supplement <i>Grounding and Bonding</i>
6	Electrical Fundamentals–Unit 19 <i>Power Factor and Efficiency</i>	6	Apprenticeship Supplement <i>Grounding and Bonding</i>
7	Electrical Fundamentals–Unit 20 <i>Motors</i>	7	Apprenticeship Supplement <i>Grounding and Bonding</i>
8	Electrical Fundamentals–Unit 21 <i>Generators</i>	8	Lab/Activity <i>Conductor Ampacity</i>
9	Electrical Fundamentals–Unit 22 <i>Transformers</i>	9	Lab/Activity <i>Conductor Ampacity</i>
10	Lab/Activity <i>Box Fill</i>	10	Quarter 4 Review
11	Lab/Activity <i>Box Fill</i>	11	Quarter 4 Exam
12	Quarter 3 Review	12	Level 1 Review
13	Quarter 3 Exam	13	Level 1 Final Exam

LEVEL 2 LESSON PLAN—AT A GLANCE

Session	Quarter 1	Session	Quarter 2
1	Introduction Orientation Tools <i>Level 2</i>	1	NEC—Article 215 <i>Feeders</i>
2	OSHA Construction Safety <i>Electrical Safety and PPE</i>	2	NEC—Article 220 <i>Branch-Circuit, Feeder, and Service Calculations 1</i>
3	OSHA Construction Safety <i>Confined Space, Emergency Response, and Lockout/Tagout</i>	3	NEC—Article 220 <i>Branch-Circuit, Feeder, and Service Calculations 2</i>
4	NEC—Article 90 <i>Introduction</i>	4	NEC—Article 225 <i>Outside Branch Circuits and Feeders</i>
5	NEC—Article 100 <i>Definitions</i>	5	NEC—Article 230 <i>Services 1</i>
6	NEC—Article 110 <i>Requirements for Electrical Installations 1</i>	6	NEC—Article 230 <i>Services 2</i>
7	NEC—Article 110 <i>Requirements for Electrical Installations 2</i>	7	NEC—Article 240 <i>Overcurrent Protection 1</i>
8	NEC—Article 200 <i>Use and Identification of Grounded [Neutral] Conductors</i>	8	NEC—Article 240 <i>Overcurrent Protection 2</i>
9	NEC—Article 210 <i>Branch Circuits 1</i>	9	Apprenticeship Supplement—Article 250 <i>Grounding and Bonding</i>
10	NEC—Article 210 <i>Branch Circuits 2</i>	10	Lab <i>GFCI Devices</i>
11	NEC—Article 210 <i>Branch Circuits 3</i>	11	Flex Day <i>School/Instructor Choice</i>
12	Quarter 1 Review	12	Quarter 2 Review
13	Quarter 1 Exam	13	Quarter 2 Exam

LEVEL 2 LESSON PLAN—AT A GLANCE

Session	Quarter 3	Session	Quarter 4
1	<i>NEC—Article 242 Surge-Protective Devices (SPDs)</i>	1	<i>NEC—Articles 334, 336, and 338 Cables Types NM, NMC, TC, SE, and USE</i>
2	<i>NEC—Article 300 General Requirements for Wiring Methods and Materials 1</i>	2	<i>NEC—Articles 340, 342, and 348 Cable Type UF, Conduits Types IMC and FMC</i>
3	<i>NEC—Article 300 General Requirements for Wiring Methods and Materials 2</i>	3	<i>NEC—Articles 350, 352, and 356 Conduits Types LFMC, PVC, and LFNC</i>
4	<i>NEC—Article 310 Conductors for General Wiring 1</i>	4	<i>NEC—Articles 344 and 358 Conduits Types RMC and EMT</i>
5	<i>NEC—Article 310 Conductors for General Wiring 2</i>	5	<i>NEC—Articles 362 and 376 Conduit Type ENT and Metal Wireways</i>
6	<i>NEC—Article 312 Cabinets, Cutout Boxes, and Meter Socket Enclosures</i>	6	<i>NEC—Articles 380, 386, and 392 Multioutlet Assemblies, Surface Metal Raceways, and Cable Trays</i>
7	<i>NEC—Article 314 Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; and Handhole Enclosures 1</i>	7	Lab/Activity <i>Conduit Bending</i>
8	<i>NEC—Article 314 Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; and Handhole Enclosures 2</i>	8	Lab/Activity <i>Raceway Sizing Calculations</i>
9	<i>NEC—Articles 320 and 330 Armored Cable (Type AC) and Metal-Clad Cable (Type MC)</i>	9	Flex Training <i>Institution/Instructor Choice</i>
10	Lab/Activity <i>Voltage-Drop Calculations</i>	10	Quarter 4 Review
11	Flex Day <i>School/Instructor Choice</i>	11	Quarter 4 Exam
12	Quarter 3 Review	12	Level 2 Review
13	Quarter 3 Exam	13	Level 2 Final Exam

LEVEL 3 LESSON PLAN—AT A GLANCE

Session	Quarter 1	Session	Quarter 2
1	Introduction Orientation Tools <i>Level 3</i>	1	Lab/Activity <i>Lighting—Ballasts and Transformers</i>
2	OSHA Construction Safety <i>Electrical Safety and PPE</i>	2	NEC—Articles 440, 445, and 450 <i>Air-Conditioning/Refrigeration Equipment and Transformers</i>
3	OSHA Construction Safety <i>Excavation/Motor Vehicles/Tool Safety</i>	3	Bonding and Grounding—Fundamentals <i>Units 1, 2, 3, and 4</i>
4	NEC—Articles 400 and 402 <i>Flexible Cords and Cables, and Fixture Wires</i>	4	Bonding and Grounding—NEC <i>Articles, 90, 100, and 110</i>
5	NEC—Articles 404 and 406 <i>Switches and Receptacles</i>	5	Bonding and Grounding—NEC <i>Article 250</i>
6	NEC—Article 408 <i>Switchboards, Switchgear, and Panelboards</i>	6	Bonding and Grounding—NEC <i>Article 250</i>
7	NEC—Articles 410 and 411 <i>Luminaires and Low-Voltage Lighting Systems</i>	7	Bonding and Grounding—NEC <i>Article 250</i>
8	NEC—Article 422 <i>Appliances</i>	8	NEC—Articles 500-503, 511, and 514 <i>Hazardous Locations, Commercial Garages, and Motor Fuel Dispensing</i>
9	NEC—Article 424 <i>Fixed Electric Space-Heating Equipment</i>	9	NEC—Articles 517, 518, 550, and 590 <i>Health Care Facilities, Assembly Occupancies, Mobile/Manufactured Homes, and Temporary Installations</i>
10	NEC—Article 430 <i>Motors, Motor Circuits, and Controllers 1</i>	10	NEC—Articles 600, 604, and 620 <i>Electric Signs, Manufactured Wiring Systems, and Elevators</i>
11	NEC—Article 430 <i>Motors, Motor Circuits, and Controllers 2</i>	11	Flex Training <i>Institution/Instructor Choice</i>
12	Quarter 1 Review	12	Quarter 2 Review
13	Quarter 1 Exam	13	Quarter 2 Exam

LEVEL 3 LESSON PLAN—AT A GLANCE

Session	Quarter 3	Session	Quarter 4
1	NEC—Articles 625 and 630 <i>Electric Vehicle Charging System and Electric Welders</i>	1	Motor Controls—Units 1–3 <i>Introduction to Motor Controls</i>
2	NEC—Articles 640 and 645 <i>Audio Signal Processing and Information Technology Equipment</i>	2	Motor Controls— Units 4–8 <i>Motor Controls and Schematics 1</i>
3	NEC—Article 680 <i>Swimming Pools, Spas, Hot Tubs, Fountains, and Similar Installations</i>	3	Motor Controls—Units 9–10 <i>Motor Controls and Schematics 2</i>
4	NEC—Articles 700, 701, and 702 <i>Emergency, Legally Required, and Optional Standby Systems</i>	4	Motor Controls— Units 11–12 <i>Reversing Controls 1</i>
5	NEC—Article 725 <i>Remote-Control, Signaling, and Power-Limited Circuits</i>	5	Motor Controls—Units 13–14 <i>Reversing Controls 2</i>
6	NEC—Articles 760, 770, 800, 810, and 820 <i>Fire Alarm Systems, Optical Fiber Cables and Raceways, Communications Circuits, Radio and Television Equipment, and CATV and Radio Distribution Systems.</i>	6	Motor Controls—Units 15–16 <i>Controls for Multiple Motors</i>
7	NEC—Article 690 <i>Solar Photovoltaic (PV) Systems 1</i>	7	Motor Controls—Units 17–20 <i>Miscellaneous Requirements</i>
8	NEC—Article 690 <i>Solar Photovoltaic (PV) Systems 2</i>	8	Lab/Activity <i>Variable Speed Drives</i>
9	NEC—Articles 480, 691, and 705 <i>Storage Batteries, Large-Scale Solar Photovoltaic (PV) Electric Supply Stations, and Interconnected Electric Power Production Sources (IEPPS)</i>	9	Flex Day <i>School/Instructor Choice</i>
10	NEC—Articles 705 and 706 <i>Interconnected Electric Power Production Sources (IEPPS) and Energy Storage Systems</i>	10	Quarter 4 Review
11	NEC—Articles 706 and 710 <i>Energy Storage and Stand-Alone Systems</i>	11	Quarter 4 Exam
12	Quarter 3 Review	12	Level 3 Review
13	Quarter 3 Exam	13	Level 3 Final Exam

LEVEL 4 LESSON PLAN—AT A GLANCE

Session	Quarter 1	Session	Quarter 2
1	Introduction Orientation Tools <i>Level 4</i>	1	<i>Code Review</i> <i>Articles 90 through 110 and 200 through 240</i>
2	OSHA Construction Safety <i>Electrical Safety and PPE</i>	2	<i>Code Review</i> <i>Articles 300 through 314</i>
3	OSHA Construction Safety <i>Hazard Communication/Jobsite Exposures/ Work Zone Safety</i>	3	<i>Code Review</i> <i>Articles 400 through 480</i>
4	Electrical Estimating—Chapters 1 and 2 <i>Introduction and About Estimating</i>	4	Fundamentals Review—Unit 1 <i>Electrician's Math and Basic Electrical Formulas</i>
5	Electrical Estimating—Chapter 3 <i>Understanding Labor Units</i>	5	Fundamentals Review—Unit 2 <i>Series, Parallel, and Multiwire Circuits</i>
6	Electrical Estimating—Chapter 4 <i>The Estimating Process</i>	6	Fundamentals Review—Unit 3 <i>Understanding Alternating Current</i>
7	Electrical Estimating—Chapter 5 <i>Determining Break-Even Cost</i>	7	Fundamentals Review—Unit 4 <i>Motor Basics</i>
8	Electrical Estimating—Chapters 6 and 7 <i>The Bid Process and Unit Pricing</i>	8	Fundamentals Review—Unit 4 <i>Transformers</i>
9	Lab/Activity <i>Blueprint Takeoff</i>	9	Fundamentals Final Review <i>Units 1–4</i>
10	Leadership Training, Part 1 <i>Leadership Skills</i>	10	Flex Training <i>Institution/Instructor Choice</i>
11	Leadership Training, Part 2 <i>Leadership Skills</i>	11	<i>NEC Calculations</i> <i>Raceway and Box Calculations</i>
12	Quarter 1 Review	12	Quarter 2 Review
13	Quarter 1 Exam	13	Quarter 2 Exam

LEVEL 4 LESSON PLAN—AT A GLANCE

Session	Quarter 3	Session	Quarter 4
1	<i>NEC Calculations—Unit 6, Part A Conductor Sizing and Protection Calculations 1</i>	1	<i>NEC Calculations—Unit 11, Parts A and B Commercial Calculations 1</i>
2	<i>NEC Calculations—Unit 6, Part B Conductor Sizing and Protection Calculations 2</i>	2	<i>NEC Calculations—Unit 11, Parts B and C Commercial Calculations 2</i>
3	<i>NEC Calculations—Unit 7, Parts A and B Motor and Air-Conditioning Calculations 1</i>	3	<i>NEC Practice Quiz 16 Sections 90.1–680.25</i>
4	<i>NEC Calculations—Unit 7, Parts B and C Air-Conditioning Calculations—Transformers 2</i>	4	<i>NEC Practice Quiz 17 Sections 680.26–701.12</i>
5	<i>NEC Calculations—Unit 8, Parts A and B Voltage-Drop Calculations</i>	5	<i>OSHA Construction Safety Handbook Review safety rules and practices</i>
6	<i>NEC Calculations—Unit 9, Parts A and B Dwelling Unit Calculations 1</i>	6	<i>Electrical Theory Review Unit Summaries</i>
7	<i>NEC Calculations—Unit 9, Parts B and C Dwelling Unit Calculations 2</i>	7	<i>Level 4 Final Exam Part 1 Journeyman Practice Exam, Electrical Theory</i>
8	<i>Lab/Activity Dwelling Unit Calculations</i>	8	<i>National Electrical Code Review</i>
9	<i>NEC Calculations—Unit 10, Parts A and B Multifamily Dwelling Calculations 1</i>	9	<i>Level 4 Final Exam Part 2 Journeyman Practice Exam, National Electrical Code</i>
10	<i>NEC Calculations—Unit 10 Parts B and C Multifamily Dwelling Calculations 2</i>	10	<i>Electrical Calculations Review</i>
11	<i>Lab/Activity Fire Alarm Systems</i>	11	<i>Level 4 Final Exam Part 3 Journeyman Practice Exam, Electrical Calculations</i>
12	<i>Quarter 3 Review</i>	12	<i>Final Exam Review Test Results and Questions</i>
13	<i>Quarter 3 Exam</i>	13	<i>Final Processing, Graduation Documents</i>