



Course Name	2023 NEC Changes Part 2
Credit Hours	8 Hours
Course Description	This online course reviews the last 100 of the most important changes to the 2023 National Electrical Code. Changes from Section 406 through Annex K will be covered.
Learning Objectives	<p>At the completion of the course, licensees will be able to:</p> <ul style="list-style-type: none">• List new locations requiring tamper-resistant receptacles.• Outline new requirements for receptacles, cord connectors, and attachment plugs found in Chapter 4 of the 2023 NEC.• Describe new requirements for switchboards, switchgear, and panelboards found in Chapter 4 of the 2023 NEC.• Identify changes for luminaires, lampholders, and lamps in Chapter 4 of the 2023 NEC.• Describe changes and additions to appliance requirements found in Chapter 4 of the 2023 NEC.• Identify updates, additions, and changes to Chapter 5 of the 2023 National Electrical Code.• Describe the changes to Class III Division 1 and Division 2 locations found in Chapter 5 of the 2023 NEC.• Outline new requirements for protection of electrical and electronic equipment in hazardous locations.• Identify changes to threading in explosion-proof or dust ignition-proof equipment.• Describe changes to permission for flexible connections and restricted industrial establishments in Class I, Division 1 and Division 2 locations.• Identify new requirements for bonding cable trays, metal strut, angles, and channels found in Chapter 5 of the 2023 NEC.• Outline new wiring methods for Class III Division 1 locations.• Explain the new requirements for cannabis oil equipment and cannabis oil systems using flammable materials found in Chapter 5 of the 2023 NEC.

- Identify changes in requirements for electrical construction and installation criteria in health care facilities.
- Describe new and changed requirements for agricultural buildings in Chapter 5 of the 2023 NEC.
- Identify changes to requirements for mobile homes, manufactured homes, and mobile home parks.
- Outline new requirements for RVs and RE parks.
- Identify updates, additions, and changes to Chapter 6 of the 2023 National Electrical Code.
- Describe new and changed requirements for branch circuits for car lights, machine rooms, controls rooms, machine spaces, control spaces and truss interiors.
- Outline new and changed requirements for electric vehicle power transfer systems found in Chapter 6 of the 2023 NEC.
- Define the change in scope for Article 626: Electrified Truck Parking Spaces.
- Explain the new and changed requirements for construction and installation of electrical wiring for swimming pools, fountains, and similar installations.
- Identify changed requirements for labeling of photovoltaic equipment floating on bodies of water and rapid shutdown of PV system circuits.
- Define the change in scope for Article 695: Fire Pumps.
- Identify updates, additions, and changes to Chapter 7 of the 2023 National Electrical Code.
- Outline new and changed requirements for emergency systems in Chapter 7 of the 2023 NEC.
- Define the changes in scope for Article 701: Legally Required Standby Systems.
- Identify changed requirements concerning signage and portable generators for optional standby systems found in Chapter 7 of the 2023 NEC.
- Describe new wiring requirements for Class 4 fault-managed power systems.
- Summarize the requirements for Class 1 power-limited circuits and Class 1 power-limited remote-control and signaling circuits covered in Article 724.
- Summarize the requirements for Class 2 and Class 3 power-limited circuits covered in Article 725.
- Outline revisions made to the listing requirements for energy management systems found in Chapter 7 of the 2023 NEC.

- Identify changed requirements for installation of circuits and supply-side overvoltage protection in fire alarm systems.
- Identify updates, additions, and changes to Chapter 8, Chapter 9, and the Annexes of the 2023 National Electrical Code.
- Describe changes in how Chapters 1 through 7 apply to Chapter 8 of the 2023 NEC.
- List changes to requirements for bonding conductors and grounding electrode conductors in buildings with and without grounding means.
- Identify new requirements for grounding or bonding of antenna systems.
- Outline new and changed requirements for network-powered broadband communication systems found in Chapter 8 of the 2023 NEC.
- Identify the update regarding measurement of nipples in Table 1 of Chapter 9 of the 2023 NEC.
- Outline new and changed requirements for conduits Annex C of the 2023 NEC.
- Summarize the information regarding use of medical electrical equipment in dwellings and residential board-and-care occupancies covered in Annex K of the 2023 NEC.

Reference Materials

NFPA 70 National Electrical Code 2023 Edition

Course Timed Syllabus

Attached

Method of Presentation

This online course presents each code section with commentary, a graphic illustration or photograph, and requires the participant to answer multiple choice questions after reviewing the content.

Schedule and Location

This course may be taken at any time at www.tradesmance.com. The student may sign in and out of the course as many times as needed to complete the course.

Attendance Verification

This course employs an inactivity timer, which will automatically log a licensee out of the training if the system does not sense a mouse click within 30 minutes.

At the end of the course, the licensee must affirm their name, that they are the one who completed the course, and verify that their registration information is correct.

Method of Evaluation

The licensee must complete all 100 multiple-choice questions between sections correctly to get credit for the course. If their first response is incorrect, students will have to try again until they choose the correct answer. Question choices are randomized, so each participant will have a unique testing experience.

The course is also timed; participants will not get credit until they spend at least 400 active minutes in the course.

After successful completion of the course, the licensee is required to complete and submit a questionnaire in order to access their certificate of completion.

Online Review Access

To review this course, go to www.tradesmance.com and sign into the learning system using the login information below.

Username: KYELtester

Password: KYELtester

Instructor(s)

Jerry Durham (resume attached)

Fee

\$59.00

2023 NEC Changes Part 2 Timed Syllabus

Section	Title	Questions	Minutes	QIDS
Chapter 4				
1	406.12 Tamper-Resistant Receptacles.	1	5	13104
2	408.4(B) Source of Supply.	1	5	13210
3	408.38 Enclosure.	1	5	13211
4	408.43 Panelboard Orientation.	1	5	13212
5	410.10(D) Bathtub and Shower Areas.	1	5	13213
6	410. Part XVII. Special Provisions for Germicidal Irradiation Luminaires.	1	5	13214
7	422.16(B) Specific Appliances.	1	5	13215
8	422.18 Ceiling-Suspended (Paddle) Fans.	1	5	13216
9	422.22 Utilizing Separable Attachment Fittings.	1	5	13217
10	424.93 Installation.	1	5	13218
11	430.113 Energy from More Than One Source.	1	5	13219
12	440.8 Single Machine and Location.	1	5	13220
13	440.11 General.	1	5	13221
14	445.19 Emergency Shutdown of Prime Mover.	1	5	13222
Chapter 5				13223
15	500.1 Scope.	1	5	13105
16	500.5(D) Class III Locations.	1	5	13224
17	500.7 Protection Techniques.	1	5	13225
18	500.8(E)(3) Unused Openings.	1	5	13226
19	501.10(A)(2) Flexible Connections.	1	5	13227
20	501.30(B) Bonding.	1	5	13228
21	502.30(B), 503.30(B) Bonding.	1	5	13229
22	503.10(A) Class III, Division 1.	1	5	13230
23	505.8 Protection Techniques.	1	5	13231
24	505.15(C) Zone 2.	1	5	13232
25	505.16(B) Zone 1.	1	5	13233
26	Article 512, Cannabis Oil Equipment and Cannabis Oil Systems Using Flammable Materials.	1	5	13234
27	517.6 Patient Care-Related Electrical Equipment.	1	5	13235
28	517.10(B) Not Covered.	1	5	13236
29	517.14 Panelboard Bonding.	1	5	13237
30	517.20(A) Receptacles and Fixed Equipment.	1	5	13238
31	517.22 Demand Factors.	1	5	13239
32	517.30 Sources of Power.	1	5	13240
33	517.70 Applicability.	1	5	13241
34	518.5 Supply.	1	5	13242
35	547.26 Physical Protection.	1	5	13243
36	547.44 Equipotential Planes and Bonding of Equipotential Planes.	1	5	13244
37	550.16(C)(1) Exposed Non-Current-Carrying Metal Parts.	1	5	13245
38	550.32 Service Equipment.	1	5	13246
39	550.33(A) Feeder Equipment.	1	5	13247
40	551.40(D) Loss of Ground Device.	1	5	13248
41	555.14 Equipotential Planes and Bonding of Equipotential Planes.	1	5	13249
42	555.15 Replacement of Equipment.	1	5	13250
43	555.36(C) Emergency Electrical Disconnect.	1	5	13251
Chapter 6				13252
44	620.22 Branch Circuits for Car Lighting, Receptacles, Ventilation, Heating, and Air Conditioning.	1	5	13106
45	620.23 Branch Circuits for Machine Room, Control Room/Machinery Space, Control Space, or Truss Interior Lighting and Receptacle(s).	1	5	13253
46	625.40 Electric Vehicle Branch Circuit.	1	5	13254
47	625.42 Rating.	1	5	13255
48	625.43 Disconnecting Means.	1	5	13256
				13257

49	625.49 Island Mode.	1	5	13258
50	625.102 Installation.	1	5	13259
51	626.1 Scope.	1	5	13260
52	630.8 Ground-Fault Circuit-Interrupter Protection for Personnel.	1	5	13261
53	646.19 Entrance to and Egress from Working Space.	1	5	13262
54	680.5 GFCI and Special Purpose GFCI (SPGFCI) Protection.	1	5	13263
55	680.12 Equipment Rooms, Vaults, and Pits.	1	5	13264
56	680.21(D) Pool Pump Motor Replacement.	1	5	13265
57	680.22(A) Receptacles.	1	5	13266
58	680.26 Equipotential Bonding.	1	5	13267
59	680.32 Ground Fault Protection Required.	1	5	13268
60	680.43 Indoor Installations.	1	5	13269
61	680.54(B),(C), Bonding, Equipotential Bonding of Splash Pads.	1	5	13270
62	680.58 GFCI, SPGFCI Protection for Adjacent Receptacle Outlets.	1	5	13271
63	680.59 GFCI and SPGFCI Protection for Permanently Installed Nonsubmersible Pumps.	1	5	13272
64	680.83 Equipotential Bonding.	1	5	13273
65	690.4(G) PV Equipment Floating on Bodies of Water.	1	5	13274
66	690.12(D) Buildings with Rapid Shutdown.	1	5	13275
67	694.7 Construction and Maintenance.	1	5	13276
68	695.1 Fire Pumps. Scope.	1	5	13277
Chapter 7				13107
69	700.3 Tests and Maintenance.	1	5	13278
70	700.4(B) Selective Load Management.	1	5	13279
71	700.11 Wiring, Class-2-Powered Emergency Lighting Systems.	1	5	13280
72	700.12(C) Supply Duration.	1	5	13281
73	700.12(E) Stored-Energy Power Supply Systems (SEPS).	1	5	13282
74	701.1 Scope.	1	5	13283
75	701.12(C)(3) Public Gas System, Municipal Water Supply.	1	5	13284
76	701.32 Selective Coordination.	1	5	13285
77	702.7(A) Standby.	1	5	13286
78	702.12(B) Portable Generators 15kw or Less.	1	5	13287
79	705.10 Identification of Power Sources.	1	5	13288
80	706.7 Commissioning and Maintenance.	1	5	13289
81	Article 724, Class 1 Power-Limited Circuits and Class 1 Power-Limited Remote-Control and Signaling Circuits.	1	5	13290
82	Article 725, Class 2 and Class 3 Power-Limited Circuits.	1	5	13291
83	725.3(A) Spread of Fire or Products of Combustion.	1	5	13292
84	Article 726, Class 4 Fault-Managed Power Systems.	1	5	13293
85	750.6 Listing.	1	5	13294
86	760.24 Mechanical Execution of Work.	1	5	13295
87	760.33 Supply-Side Overvoltage Protection.	1	5	13296
Chapter 8				13108
88	800.3 Other Articles.	1	5	13297
89	800.100(B)(2) Electrode. In Buildings or Structures with Grounding Means.	1	5	13298
90	800.100(B)(3) In Buildings or Structures Without an Intersystem Bonding Termination or Grounding Means.	1	5	13299
91	800.113 Installation of Cables Used for Communication Circuits, Communications Wires, Cable Routing Assemblies, and Communications Raceways.	1	5	13300
92	800.179 Wires and Cables.	1	5	13301
93	810.15 Grounding or Bonding.	1	5	13302
94	830.40(B) Low-Power Circuits.	1	5	13303
95	830.47 Underground Network-Powered Broadband Communications Cables Entering Buildings.	1	5	13304
96	830.133(C) Splicing of Medium-Powered Network-Powered Communications Cables.	1	5	13305
97	830.160 Bends.	1	5	13306

Chapter 9 and Annexes			
98	Chapter 9, Table 1.	1	5
99	Annex C, Table C.1 Conduit, Tubing, and Cable Tray Fill Tables for Conductors and Fixture Wires of the Same Size.	1	5
100	Annex K, Use of Medical Electrical Equipment in Dwellings and Residential Board-and-Care Occupancies.	1	5
Totals:		100	500
Student Minimum Time Required:			400

13109

13307

13308

13309

Jerry L Durham

Certificates/Licenses

North Carolina Electrical Inspector Level III

North Carolina Plumbing Inspector Level I

North Carolina Mechanical Inspector Level I

Washington Electrical Administrator #DURHAJL821PQ

ICC Kentucky E1 Electrical Inspector, Masters Electrician, Journeyman Electrician

NCCER Core and Electrical Curriculum Instructor Certification

Work Experience

Instructor (JADE Learning, LLC)

2018 - Present

Write and develop course curriculum, technical articles, and related learning materials. Teach in-person classroom courses.

Electrical Inspector- LVL 3 (Alamance County Government)

2015 - 2018

Code enforcement officer, enforcing all guidelines set forth in the National Electrical Code and applicable State-issued code amendments, as they apply to residential and commercial electrical installations throughout the state of North Carolina.

Electrical Instructor (Alamance Community College)

2017- Present

Taught from six to thirty NC electrical inspectors per 40-hour training session. Taught basic electrical theory, Ohm's Law, circuitry, voltage drop calculations, box/pipefill calculations, junction and pull-box calculations, conductor derating and adjustment calculations, residential-service-calculations, and National Electrical Code.

Code Enforcement Officer (Louisville Metro Government)

2009 - 2015

City inspector, charged with determining property maintenance and health and safety code compliance and/or infractions for dwellings (interior/exterior), commercial structures, properties, parcels and lots. Included enforcement of local, state and federal code requirements pertaining to building, zoning, electrical, plumbing, HVAC and Land Development in the Louisville Metro area. The department's electrical instructor, performing classroom setting electrical instruction.

Electrical Instructor (ABC Trade School)

2010 - 2014

Instructor of 25 electrical trade students participating in their first through fourth year of a four-year electrical apprenticeship program. Also performed state approved Masters and Journeyman State Licensing preparatory courses.

Electrical Instructor (IEC Trade School)

2009 - 2010

Instructor of 25 electrical trade students in a four-year apprenticeship program.

Licensed Electrician (Curtsinger Electric Company)

2003 - 2009

Managed multiple electrical remodel and new-build projects, performing interior/exterior lighting design, installation and system troubleshooting. Diagnosis and repair of residential and commercial electrical, phone and cable installations. Continual training of apprentices in the areas of customer care, electrical theory/diagnosis, repair/installation and effective time management.