



Course Description, Performance Objectives and Outline Analysis of Changes 2020 NEC - Part 3 – Chapter 5 through Article 682

Course Description

Welcome to the course “Analysis of Changes 2020 NEC - Part 3 – Chapter 5 through Article 682”. The instructor for this course is David Arnold, with expert code change support being provided by Keith Lofland, Director of Education at the International Association of Electrical Inspectors (IAEI).

This online course is an extensive and popular program analyzing the major changes to the National Electric Code (NFPA 70™) for the 2020 cycle. Members of the eighteen NEC® code-making panels contributed to the development of the authoritative text used in this online course.

The course covers more than 60 of the most significant code changes in Chapter 5 through Article 682. Specifically, the course covers code changes related to special occupancies and special equipment.

Performance Learning Objectives

Upon successful completion of this course participants will be able to:

- Recognize changes to hazardous locations, commercial garages, aircraft hangars and motor fuel dispensing facilities.
- Define proper changes for health care facilities, assembly occupancies, theater and similar locations.
- Understand changes regarding manufactured buildings, agricultural buildings, mobile homes, recreational vehicles, marinas, boatyards and temporary installations.
- Describe code changes related to electric signs, office furnishings, elevators, escalators, platform lifts and stairway chairlifts.
- State changes to the use of electric vehicle charging systems.
- Identify code changes related to information technology equipment, swimming pools, fountains and similar installations.

Timed Course Outline – 4 Online CE Hours

Note: Timing based on actual audio running time, analysis of change text @ 500 words per minute, quiz questions @ 30 seconds each and final exam questions @ 1 minute each. No seat time allotted for Summary of Change tab.

I. Introduction and Copyright (0 minutes used in seat time calculation)

- Welcome to IAEL and Pace - NFPA, NEC Copyright Information 2020
- Course Orientation
- Performance Learning Objectives
- Course Syllabus
- Course Interface Instruction
- Ask the instructor

II. Articles 500 - 514 (28 minutes)

- 500.7(K) Combustible Gas Detection System as a Protection Technique
- 500.7(L), (M), (N), and (O) New Protection Techniques for Electrical and Electronic Equipment
- 501.10(A)(1) Type TC-ER-HL cable and Type P Cable
- Table 505.9(C)(2)(4) Equipment Suitability
- 511.12 GFCI Requirements for Commercial Garages
- 513.3(D) “Adequately Ventilated” in Aircraft Hangar
- 514.11(A) Motor Fuel Dispensing Facilities
- Articles 500 - 514 Quiz

III. Articles 517 – 518 (30 minutes)

- 517.10(B) Areas Used Exclusively for Intramuscular Injections (Immunizations)
- 517.16 Isolated Ground Receptacles Located Outside of a Patient Care Vicinity
- 517.17(D) Ground-Fault Protection of Equipment Testing
- 517.26 Application of Other Articles
- 517.30(B)(3) Battery Systems as Alternate Source in Essential Electrical System
- 517.31(C)(1)(a) Raceways, Cables, and Enclosures of the Life Safety and Critical Branch
- 518.6 Illumination of Working Space
- Articles 517 - 518 Quiz

IV. Articles 520 – 550 (29 minutes)

- 520.25(B) Dimmers for Theatrical Use
- 520.68(A)(2) Listed Hard Usage (Junior Hard Service) Cord or Cable

- 525.20(G) Wiring Methods for Carnivals, Circuses, Fairs, and Similar Events
- Article 545, Part II Manufactured Buildings and Relocatable Structures
- 547.5(G) GFCI Protection in Agricultural Buildings
- 547.9 Distribution Point Required for Livestock Agricultural Buildings and Structures
- 550.13(B) GFCI Protection at Mobile and Manufactured Homes
- 550.32(E) Receptacle Providing Power to a Mobile or Manufactured Home
- Articles 520 - 550 Quiz

V. Articles 551 – 590

(28 minutes)

- 551.40(D) Reverse Polarity Device in Recreational Vehicles
- 555.2 New Definitions for Marinas, Boatyards, Floating Buildings, and Commercial and Noncommercial Docking Facilities
- 555.13 Bonding of Non-Current-Carrying Metal Parts
- 555.35 GFPE and GFCI Protection in Marinas, Boatyards, Floating Buildings, and Commercial and Noncommercial Docking Facilities
- Article 555 Part III Floating Buildings
- 590.4(G), Ex. No. 2 Temporary Installations
- 590.8 Overcurrent Protective Devices in Temporary Installations
- Articles 551 - 590 Quiz

VI. Articles 600 – 620

(29 minutes)

- 600.2 Four New Definitions for Retrofit Kits
- 600.4(D) Electric Signs and Outline Lighting
- 600.5(A) Entrances for Deliveries, Service Corridors, or Service Hallways
- 600.5(B) and 600.6(A)(4) Electric Signs and Outline Lighting Branch Circuits
- 600.35 Retrofit Kits for Signs and Outline Lighting Systems
- 605.1(B) Scope of Covered and Not Covered Items for Office Furnishings
- 620.6 GFCI Protection Requirements in Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts
- 620.65 Signage for Selective Coordination
- Articles 600 - 620 Quiz

VII. Articles 625 – 645

(29 minutes)

- Article 625 and 625.1 Electric Vehicle Power Transfer Systems
- Article 625, Part II Product Construction Requirements
- 625.17(B) Output Cable to Electric Vehicle
- 625.44 Electric Vehicle Power Transfer System
- 625.54 Receptacle Outlets Used for EV Charging
- 625.56 Receptacles Installed in a Wet Location for Electric Vehicle (EV) Charging

- 625.60 AC Receptacle Outlets Used for EVPE
- 645.5(E)(2) and 645.5(E)(3) Supply Circuits and Interconnecting Cables Installed Under a Raised Floor of IT Equipment Rooms
- Articles 625 - 645 Quiz

VIII. Articles 680.2 – 680.21

(27 minutes)

- 680.2 and 680.14 Definition, Corrosive Equipment
- 680.2, 680.35, and 680.45 Immersion Pools
- 680.2 and 680.50 Splash Pads
- 680.4 Inspections After Installation
- 680.9(A) Overhead Power Conductors Installed over Swimming Pools
- 680.11 Underground Wiring and Swimming Pools
- 680.21(C) GFCI Protection in Motors Used in Swimming Pools
- 680.21(D) Pool Pump Motor Replacement
- Articles 680.2 – 680.21 Quiz

IX. Articles 680.22 – 682

(35 minutes)

- 680.22(A)(5) Pool Equipment Room
- 680.22(E) Other Equipment with Ratings Exceeding the Low-Voltage Contact Limit
- 680.23(B)(6) Wet-Niche Luminaire Servicing
- 680.26(B)(2)(C) Copper Grid System as Alternative Method for Equipotential Bonding
- 680.26(B)(5) Bonding of Metal Anchors Used for Pool Safety Covers
- 680.59 GFCI Protection for Nonsubmersible Fountain Pumps
- 680.80 and 680.84 Electrically Powered Pool Lifts
- 682.15 GFCI Rules Pertaining to Natural and Artificially Made Bodies of Water
- 682.33(C) Equipotential Planes and Bonding of Equipotential Planes
- Articles 680.22 – 682 Quiz

X. Final Exam

(30 minutes)

Total Seat Time: 234 minutes

Utah Electrician (DOPL)
Continuing Education Course Completion Certificate

David Arnold

License Number: 123456

*This certifies that the individual named has successfully
completed the course requirements for:*

Analysis of Changes 2020 NEC - Part 3 – Chapter 5 through Article 682

Course Approval Number: xxxxx

*which was completed on 4/21/2022
and has earned 4.00 continuing education hours.*

Online course provided by:

The Media Factory, Inc. (d/b/a PacePDH.com)

Tampa, FL 33609

(813) 830-6523

Instructor Name: F. Jody Wages



www.pacepdh.com

A handwritten signature in black ink, appearing to read "Ron May".

Ron May, Vice President



Course Syllabus

Sponsor / Facilitator Information

David Arnold
PacePDH.com
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Instructor / Code Change Content Expert

Jody Wages, Director of Digital Education
International Association of Electrical Inspectors
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Assignments and Homework:

This is an online course. All course work is contained within the course itself. There are no additional assignments or homework outside the course itself.

Broadcast Schedules:

All portions of this course may be taken at any time 24/7, at the student's discretion.

Student Material Requirements:

This course requires an Internet connection. While the course will play using a slower connection, a higher speed connection (e.g. DSL or cable modem) is recommended because of the extensive use of audio in the course. The course also can be played on a tablet or smart phone.

Testing and Grading Information:

The course includes quizzes throughout the course, typically about every half hour. The

passing score for the quizzes is 70%. The *NEC*® 2020 code book may be used as a reference during testing.

Library and Resource Information:

Strikethrough code language, showing previous 2017 code language that has been changed or deleted in the 2020 *NEC*, is available in the Summary of Change tab at the end of each code change slide.

Deadlines:

There are no deadlines imposed by PacePDH.com and our courses do not expire. However, to receive credit, the course should be completed before the Board/jurisdiction course approval date expires. The system will not allow you to launch a course that is expired. Obviously, you should try to complete the course before your individual license renewal period ends.

Registration Period:

You may register for this course at any time.

Fees and Refunds:

PacePDH.com typically receives course tuition payments in advance via student credit or debit card payments through its secure online Web portal. Checks are also accepted; in which case courses are assigned once the check is received. For company or group purchases, payment terms may be given.

PacePDH.com's refund policy is simple, a full cash refund is offered for up to 90 days or until the course has been completed, whichever comes first. After the 90 day period courses that have not been completed can be converted into course credits for other Pace offerings. For example, if a student has completed one hour of a four-hour online course and then decides they do not want to complete the course, a full refund is still offered if it is within 90 days of the purchase date, otherwise a course credit is offered. Once the online course has been completed, as determined by our LMS (learning management system), a refund is no longer offered.

ADA Information:

This course is not compliant with Section 508 of the U.S. Rehabilitation Act.

Technology Support Services:

Tech support for students is available Monday through Friday 8AM to 6PM eastern time. Afterhours and weekend support is offered at times. Support is available by phone at

(800) 576-4341, via Web form at <http://www.pacepdh.com/index.cfm?fuseaction=custom.contact> or via e-mail at PaceSupport@PacePDH.com .

Completion and Assignment Time Lines:

See “Deadlines” above.

Prior Learning Assessments / Prerequisites:

There are no prerequisites for this course. Course interface/navigation instructions, “Ask the Instructor” and directions on how to take personal course notes are provided at the beginning of the course.