

Agenda

Presented by JD White

Overview of Major Changes in 2020 National Electrical Code

Expanded GFCI requirements	Dwelling service disconnect requirements
Required surge protection	Expanded torque requirements
Lighting loads for non-dwellings	Pool systems, follow-up inspections
New code articles	

Overview of new 2017 NEC Articles

Article 425: Fixed Industrial Process Heating
Article 691: Large-Scale PV Electric Power Production
Article 706: Energy Storage Systems
Article 710: Stand-Alone Systems
Article 712: Direct-Current Microgrids

Chapter 1: National Electrical Code

Requirements for electrical installations, including clearances and free space requirements about equipment
New reconditioned equipment, identification and traceability
New limited access working space requirement
New short-circuit current documentation

Chapter 2: Wiring and Protection

Grounded conductors	Branch circuit, feeder and services calculations
GFCI receptacle outlet requirement	New GFCI protection for non-dwelling units

Grounding and Bonding

Grounding of separately-derived systems	
Grounding electrodes	Bonding of services

Chapter 3: Wiring Methods and Materials

Wiring methods – underground installation requirements
Conductor ampacity correction and adjustments
New single-phase dwelling services and feeders

Chapter 4: Equipment for General Use

Switchboards and panel boards	Short circuit rating
Luminaires, appliances, transformers and motors	

Chapter 5: Special Occupancies

Commercial garages	Health care facility requirements
Recreational vehicle parks	

Chapter 6: Special Equipment

Hybrid vehicle plug in requirements	Pools and spas
Solar photovoltaic systems	

Chapter 7: Special Conditions

Emergency systems	Fire alarm circuits
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Chapter 8: Communications Circuits

Premises-powered broadband communication systems
Network-powered broadband communication systems

Chapter 9: Tables

Conductor fill and raceway calculation example

National Electrical Code 2017 and 2020 Livonia, MI - Thursday, April 23, 2020

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Learning Objectives

You'll be able to:

Explain what is now required in the state of Michigan by understanding the 2017 National Electrical Code.

Discuss dwelling service disconnect requirements, required surge protection, and other major changes to the brand new 2020 National Electrical Code.

Understand the limited access working space requirement and short-circuit current documentation.

Learn about GFCI protection for non-dwelling units and single phase dwelling services and feeders.

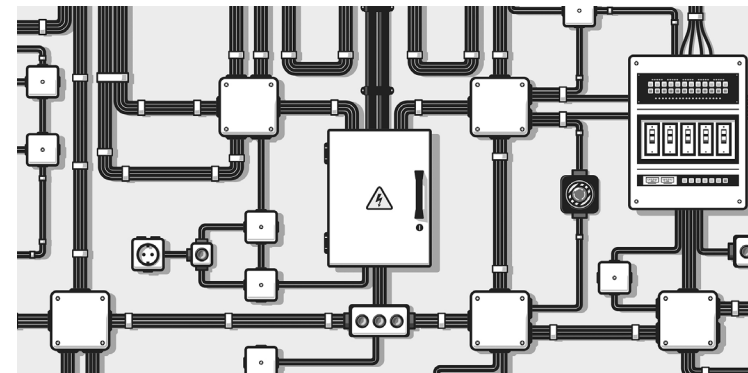
Identify requirements for emergency systems, fire alarm circuits and communications circuits.



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HalfMoon Education Online Learning National Electrical Code 2017 and 2020

Livonia, MI - Thursday, April 23, 2020



Discuss major changes in the brand new 2020 National Electrical Code

Learn in-depth, chapter-by-chapter specifics of the 2017 National Electrical Code which was adopted by Michigan in 2019

Get an overview of new 2017 NEC Articles

Analyze wiring and protection, grounding and bonding, and wiring methods and materials

Explore equipment for general use, special occupancies, and special equipment

Learn about special conditions and communication circuits, and review NEC tables

Continuing Education Credits

Professional Engineers
7.0 Continuing Ed. hours

International Code Council
.7 CEUs (Electrical)

Architects
7.0 HSW Continuing Ed. Hours
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Contractors
Non-Credit Continuing Ed.

Webinar instructions and login information will be provided in an email sent close to the date of the webinar. To register, please fill out the attached form or visit us at:
www.halfmoonseminars.org/webinars/



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Faculty

JD White *Consultant at Freelance Electrical System Design and Drafting*

Mr. White's has spent the past 12 years with Columbus State Community College as its Skilled Trades Program Coordinator. This role has provided him with insights beyond teaching including their migration to semesters, providing oversight of 144 apprenticeship courses, and 28 open enrollment courses covering Construction, Carpentry, Electrical, Plumbing, and Welding. He helped personally write some of these new courses. Mr. White helped craft 15 Plans for Study for various Certificates, AAS majors, and ATS majors. He has been an active part of articulation agreements, with various vocational career programs and apprenticeship programs. He started a new open enrollment program in June of 2007, which had over 200 active students and filling 28 course sections per term, prior to handing it over to a new faculty member. Mr. White is presently working with 10 apprenticeship partnerships with an annual enrollment of 1,500 students. He has oversight of five labs, equipment, and materials and lab personnel.

Here's what past attendees had to say about the program and presenter JD White:

"JD was great."— *General Contractor*

"Great presenter. Kept full group engaged."— *Consulting Engineer*

"Probably the best HEI course I have attended!"— *Civil Engineer*

"Instructor is an expert on this topic."— *Electrical Engineer*

Seminar Information

Log into Webinar	Break
8:00 - 8:30 am EDT	12:30 - 1:30 pm EDT
Morning Session	Afternoon Session
8:30 am - 12:30 pm EDT	1:30 - 5:00 pm EDT

Tuition

\$299 for individual registration

\$279 for three or more simultaneous registrations.

Included with your registration: *Seminar manual in PDF format.*

How to Register

- Visit us online at www.halfmoonseminars.org/webinars/
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

Additional Learning

Webinar Series

- Tree Science**
- **Biology and Benefits of Trees**
Wed., April 15, 2020, 11:00 AM - 1:00 PM CDT
 - **Tree Infrastructure: Design Elements That Appreciate**
Wed., April 15, 2020, 1:30 - 3:00 PM CDT
 - **Trees and Site Requirements**
Thurs., April 16, 2020, 11:00 AM - 12:00 PM CDT
 - **Project Completion and Tree Threat Prevention**
Thurs., April 16, 2020, 12:30 - 12:30 PM CDT

- Structural Forensic Engineering**
- **Overview of the Role of Forensic Engineering**
Thurs., April 16, 2020, 11:00 - 12:30 PM CDT
 - **Forensic Engineering Process and Forensic Engineering Report**
Thurs., April 16, 2020, 1:00 - 3:00 PM CDT
 - **Causes of Structural Failures**
Fri., April 17, 2020, 11:00 - 12:30 PM CDT
 - **Forensic Examination of Structures and Use in Litigation**
Fri., April 17, 2020, 1:00 - 3:00 PM CDT

Continuing Education Credit Information

This seminar is open to the public and offers 7.0 continuing education hours to professional engineers and 7.0 HSW continuing education hours to architects in all states. Educators and courses are not subject to pre-approval in Michigan.

This course has been approved by the American Institute of Architects Continuing Education System for 7.0 LU|HSW (Provider No. J885). Visit www.halfmoonseminars.org to view complete AIA/CES information under this course listing. Only full attendance is reportable to the AIA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York engineers and architects.

The International Code Council has approved this event for .7 CEUs in the specialty area of Electrical (Preferred Provider No. 1232).

This seminar offers contractors a non-credit continuing education opportunity. It has not been submitted to any state contractor licensing entity for continuing education approval

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$279. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

- Water Conservation**
- **Reviewing the Owner's Commitment to Water Conservation and Applicable Codes and Standards**
Thurs., April 23, 2020, 11:00 AM - 12:30 PM CDT
 - **Assessing the Building Site**
Thurs., April 23, 2020, 1:00 - 2:00 PM CDT
 - **Conserving and Reducing Water Use**
Fri., April 24, 2020, 11:00 AM - 1:00 PM CDT
 - **Onsite Water Recycling and Minimizing Water Use**
Fri., April 24, 2020, 1:30 - 3:30 PM CDT

For more information and other online learning opportunities visit: www.halfmoonseminars.org/webinars/

Registration

National Electrical Code 2017 and 2020

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Tuition

() **I will be attending the live webinar.** Single Registrant - **\$299.00**. Three or more registrants from the same company registering at the same time - **\$279.00** each.

() **I am not attending.** Please send me the self-study package:

☐ Downloadable MP3 Audio/PDF Manual for **\$279.00**.

☐ CD/Manual Package for **\$299.00**. ☐ USB/Manual Package **\$299.00**. (S&H included. Please allow five weeks from seminar date for delivery)

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