



JCR Productions, Inc.
256 Raceway Drive, Suite 11
 Mooresville, NC 28117
 Phone: 704-696-8555
 Fax: 704-696-8702
 www.jcrproductions.com

REVIEW & RENEW THE NEC® INCLUDING CODE CHANGES

Course Syllabus

Description

This is an 8-hour interactive workshop focused on learning and/or reviewing multiple concepts that are essential for active electrical contractors. The emphasis is on learning, refreshing, and improving ones knowledge and exposure of the National Electrical Code. Current NEC® changes are added into each topic throughout the day providing applicability of each change to tradesman daily tasks.

Method of Instructional Delivery

Classroom – lecture, discussion of topics, and hands-on problem solving and calculations

Learning Objectives

- 1) Licensees will demonstrate improved navigation skills within the NEC®.
- 2) Licensees will learn problem-solving techniques by actively working through mathematical processes required for calculating ampacities, determining appropriate overcurrent protection, and Article 430 and 250 applications.
- 3) Licensees will learn alternate and more efficient solutions for problems faced in the field.
- 4) Licensees will learn and evaluate 2017 NEC® changes as it relates to electrical work and their individual specialization.

Outline of Day

7:30am-8am: Registration

8am-9:30am: Code Organization/Arrangement

A complete review of the organizational flow of the National Electrical Code®. Beginning with 90.3 Code Arrangement, and breaking down the four affiliations within the structure of the NEC such as; General, Special, Communications, and Chapter 9. We cover the possible modifications that may occur between the General and Special Chapters using several examples, and we continue to identify many common and affiliated groups of articles that work together in common themes (*i.e. paralleled numbering system*). The intent of this review is to show the overall ease of use of the document by

showing its uniformity and obvious flow of affiliations. Also included is an organizational coverage of the “Parts” of the Table of Contents to assist in researching information. (applicable 2017 code changes included)

9:30am-11am: Conductor Sizing & General Wiring

All of Chapter 3 covers General Wiring requirements with a special focus on proper conductor selections based on ampacities and conditions of use. All conductor voltages (0 to 35,000 V) are addressed for proper table usage and selections. All deration requirements and procedures are reviewed and worked through various examples of single and double deration conditions. Neutral identifications, requirements and sizing are strongly discussed in this subject with a warning for identifying and dealing with harmonically loaded neutrals in wye systems. (applicable 2017 code changes included)

11am-11:45am: Raceway Applications

Articles 342 through 392 covers all raceway types, allowed usages and requirements. Chapter 9, tables 1, 4, & 5 cover all raceway fill requirements including the special notes for specific conduit and tubing installations. Raceway fill exercises are completed in class for conduit & tubing, wireways, and cable trays. (applicable 2017 code changes included)

11:45am-2pm: Overcurrent Protection (0-1000 volts & over 1000 volts)

Conductor protection requirements of 240.4 and the modifications in (A through G) are discussed to properly protect conductors of any size and load condition from 0 to 1,000 volts. Medium voltage (over 1,000 volt) requirements are also discussed and worked through examples in class. GFPE, GFCI, and AFCI protection requirements are included in this subject. Additional topics are: tap rules, AIC/RMS ratings and requirements, overcurrent types, usages, and ratings, etc. as time permits. (applicable 2017 code changes included)

2pm-3pm: Bonding & Grounding

Definitions are discussed, including, the intention of use(s) of components utilized for Bonding & Grounding such as Grounded/Neutral conductors, main & system bonding jumpers, grounding electrodes and grounding electrode conductors, equipment grounding and bonding conductors, etc. (applicable 2017 code changes included)

3pm-4pm: Motors & Motor Circuits

Article 430 is discussed and students are introduced to the determining factors from the “Six Pack: 22, 24, 32, 52, 83 and 110.”

Materials Needed

Workshop participants are provided with a *Review and Renew including 2017 NEC® Changes* workbook. Participants must bring an NFPA-70, National Electrical Code 2017 Edition. They are suggested to bring a notebook and a calculator to class.

Evidence of Completion

Participants are required to sign a state-specific roster(s) and show a picture ID upon entering the workshop. Each participant is provided with a Certificate of Completion at the end of class distributed by the instructor, Jeff Rodriguez. JCR Productions, Inc. retains original copies of all signed rosters and has electronic copies kept indefinitely.

Cost

\$205.00 - includes workshop, workbook, and additional optional *Review and Renew the NEC®* online course

Class Location & Size

Workshops are held monthly at the following locations:

Hampton Inn & Suites, 3920 Arrow Drive, Raleigh, NC 27612
Maximum class size: 60 students

Springhill Suites by Marriott, 121 Gateway Blvd, Mooresville, NC 28117
Maximum class size: 40 students

Holiday Inn & Suites, 42 Tunnel Road, Asheville, NC 28805
Maximum class size: 36 students

Instructor

Jeff Rodriguez, Code Consultant and Owner, JCR Productions, Inc.