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## **UTAH: REVIEW & RENEW THE NEC®**

*8 hours – Electrical Code*  
Online Course Syllabus

### **Course Description**

This is an online timed course consisting of videos and questions referencing relevant electrical topics, as referenced below. Licensees are prompted to choose categories that are appropriate to their line of work, watch available videos, and answer questions within each section. The goal is to 'get them in the code' by asking questions and demonstrating techniques which are embedded within the reference materials available for electricians.

### **Presentation Method**

This course is online through the JCR Online Training Center.

### **Learning Objectives**

- 1) Licensees will consult the appropriate reference material for the questions they are answering. This includes the 2017 National Electrical Code book. This consultation will reinforce the need to have and use industry reference materials.
- 2) Licensees will demonstrate improved navigation skills within the NEC®, or other field resources, which will help guide them on solving problems they may experience on-the-job.
- 3) Licensees will learn problem-solving techniques while viewing video content available through the growing video library.

### **Categories Available**

*Learners select 7 categories and will answer 20 questions in each category. While each participant may vary, each category has an estimated amount of time beside the name to depict an average completion time per category selection (including videos and questions.)*

#### **1) Appliances & General Equipment (60 minutes to complete)**

Questions and video content focus primarily on Chapter 4 of the NEC® and include: luminaires, appliances, space heating equipment, air conditioning equipment and transformers.

## **2) Box Fills & Pulls (60 minutes to complete)**

Questions and video content focus on Articles 312 and 314 and include: conductors permitted in outlet, device, pull and junction boxes, pancake boxes and conduit bodies.

## **3) Grounding & Bonding (60 minutes to complete)**

Questions and video content focus on Section 250 of the NEC® and cover: service and equipment bonding & grounding requirements, line and load side identification, separately derived systems, grounding electrode systems, fault paths and fault clearing, and the overall concept and purpose of bonding & grounding any system.

## **4) Document Organization (50 minutes to complete)**

Questions and video content explore Article 90 code arrangement, the Paralleled Numbering System and other location systems and practices when working within the NEC®.

## **5) Motors & Motor Circuits (90 minutes to complete)**

Questions and video content explore Article 430 including: motor circuit component calculations and sizing for DC, single phase and three phase motors.

## **6) Overcurrent Protection (0-1,000 volts & over 1,000 volts) (50 minutes to complete)**

Questions and video content explore appropriate overcurrent device selections for all voltages, tap rules, OCD locations, GFCI & AFCI requirements, fuse & breaker usages and differences and focuses on Article 230 and Tables in Article 310.

## **9) Ohm's Law & Calculations (90 minutes to complete)**

Questions and video content explore basic principals of electrical calculations including Ohm's Law, line diagrams, and single and three-phase formulas. Contents also explore Article 220's standard & optional calculation methods & examples; service, feeder & branch circuit calculations; derations and sizing requirements for the grounded and ungrounded conductors.

## **10) Research the NEC® (30 minutes to complete)**

True/False questions from this category are intended to provide the licensee with practice using the NEC's Table of Contents to efficiently and effectively find the answers to the questions for which they are seeking.

## **11) Services (45 minutes to complete)**

Questions and video content explore: service conductors (overhead, underground, and service entrance), service equipment, service disconnecting and service overcurrent from Article 230.

## **12) Special Locations (60 minutes to complete)**

Questions and video content explore: swimming pools, spas and hot tubs; hazardous locations and emergency systems and pulls from Chapters 6 and 7 in the NEC®.

## **13) Wiring Methods (60 minutes to complete)**

Questions and video content explore: conductor and equipment installation practices, conductor ampacities & derations, raceway fill procedures and allowances, switchboards & panelboards, and Chapter Three general installation methods.

### **Materials Required**

Learners must have a 2017 NEC® to successfully complete this course.

### **Security**

This course requires each learner to create an individual account including a unique username and password. They must also enter the last four digits of their social security number. Each security parameter must be entered in order to gain admittance to their course to ensure ethical completion of their course. Also, each participant's course is unique and may not be printed, mitigating someone printing their questions and having someone else answer it offline.

### **Assessment/Completion**

Learners must pass each category with a minimum score of 70% in order to successfully submit their course for approval. Individuals can choose to continue with their course after they have achieved a passing score for their own betterment.

When a learner has completed their category, they may go back and see which answers are incorrect. At that time, the course will reveal which questions are incorrect (but will not provide the previous answer) and will reveal a reference to where in the code (or reference material) the answer can be found. This prompting is intended to help train the licensee on where they can go to find the correct information.

This course has a timer which records time in increments of 5 seconds. Learners only receive credit for time spent watching videos and answering the questions. Learners must spend 480 minutes viewing videos and answering questions, in order to pass this course.

Upon successful completion within each category, a Submit Course button will appear. Clicking the submit course button sends an email to JCR staff. Staff will then issue a Certificate of Completion and send to the licensee.

**Course Setup for Board Review:**

[www.jcrproductions.com/learn](http://www.jcrproductions.com/learn)

**Username: Utah**

**Password: Licensing#1**