

## **Course Title**

**RV-11547 - 2020 NEC® Changes: Equipment for General Use**

## **Contact Hours: 1**

Do you know if the NEC has any new requirements for General Use Equipment? This course covers the changes in Articles 411, 422, 424, 430, 440, 445, 450 and 480 of the National Electrical Code®. Article 411 contains the requirements for low voltage lighting. Article 422 covers appliances. Article 424 covers fixed electric space-heating equipment. Article 430 covers motors and their controllers. Article 314 covers air-conditioning and refrigeration equipment. Article 445 contains the requirements for generators. Article 450 covers transformers. Article 480 covers storage batteries. Notable changes include expanding the GFCI requirements for specific appliances, addressing new overload protection options for certain motors, new listing requirements for generators, and added disconnecting means requirements for generators and batteries.

## **Course Objectives:**

By the end of this course, you will be able to:

- Discuss when an assembly of listed parts are allowed for low-voltage lighting.
- List the appliances that require GFCI protection if they're rated 150 volts or less to ground and 60 amps or less.
- Recall the voltage threshold for appliances that require listing.
- Indicate when a thermostat can be used as a disconnecting means.
- Define electronically protected.
- Determine if a stationary generator should be listed or field labeled.
- Recall the requirements of emergency shutdown devices for generators and battery systems at dwelling units.

## **Content Outline**

<b>Introduction</b> Course Overview	<b>(3 minutes)</b>
<b>Article 411</b> Low-Voltage Lighting	<b>(5 minutes)</b>
<b>Article 422.5</b> Appliances	<b>(15 minutes)</b>
<b>Article 424</b> Fixed Electrical Space Heating Equipment	<b>(5 minutes)</b>
<b>Article 430</b> Motors Motor Circuits Motor Controllers	<b>(10 minutes)</b>
<b>Article 440</b>	<b>(5 minutes)</b>

## Air Conditioning and Refrigeration Equipment

<b>Article 445</b> Generators	<b>(5 minutes)</b>
<b>Article 450</b> Transformers	<b>(5 minutes)</b>
<b>Article 480</b> Storage Batteries	<b>(5 minutes)</b>
<b>Conclusion</b> Summary and Implications	<b>(2 minutes)</b>

### 1. **List of reference and source materials/bibliography**

All material necessary to complete the course is included in the course. A subject matter expert using his or her own personal knowledge writes the course. Students are not directed to additional material as a requirement for course completion, only as added information for personal interest.

### 2. **Instructor Information**

Ryan Jackson – Resume Attached

### 3. **Totals hours of Instruction**

1 Hour(s) – this course is online and available 365/24/7 to anyone with internet access

### 4. **Certificate of completion**

sample is attached

### 5. **Proof of compliance with interactive distance learning requirements**

- a. Courses are being developed with interactivity as a key component in its development. RedVector's 'rule of thumb' is to insert an activity every 3 to 5 minutes or 500 to 800 words of text. We offer a variety of activities through the coursework to keep the user involved and requiring knowledge of the course materials being reviewed in order to move forwards.
- b. Users sign into an account with a unique User Name and Password. We request that a user agree to an affidavit stating that they are the owner of the account before proceeding to the exam. Course completion is measured by passing the exam with a minimum score of 75%.
- c. FL Contractors are notified at the beginning of the course that they are required to spend 50 minutes per credit hour in the course in order to receive an accreditation certificate. The LMS

will not allow a certificate to be issued or reflect course completion until the time requirement is not by the user.

- d. By one click of the button on each screen of the coursework, the user is given the option to obtain information in several ways. We have a FAQ page, direct email request to Client Support or they may call through a Toll Free number. Our Client Support Team is available from 8 am to 6 pm, Monday thru Friday. If there is a general question, RedVector consults with several Subject Matter Experts that respond to questions in a timely manner. If the question is more specific requiring a direct response from the course author, communication is made with the author to provide the user a response.
- e. There is a statement required to be agreed upon by the User confirming their identity before and after taking the test.
- f. Each account is established with a unique user name and password in order to access. If a user is taking a longer than normal time to review a section, they will receive a pop-up and have 90 seconds to respond or their session will time out requiring the user to sign into the site again if they wish to continue the coursework.