



## **Course Name** Residential Wiring (2023 NEC)

**Credit Hours** 8 Hours

**Instructor(s)** Jerry Durham

**Fee** \$85.00

**Reference Materials** NFPA 70 National Electrical Code 2023 Edition

### **Course Description**

This online course is based on the 2023 NEC and provides users a room-by-room walkthrough of a modern dwelling unit from the electrician's perspective. Using the 2023 NEC as their guide, licensees will be presented the general requirements for successfully assembling a dwelling unit electrical service, as well as minimum branch circuit requirements, receptacle outlet requirements, GFCI and AFCI protection requirements, lighting requirements, and special equipment and systems requirements for each room and the exterior of the dwelling unit.

### **Learning Objectives**

At the completion of the course, electricians will be able to:

- Organize the steps to building a NEC-compliant single-phase dwelling unit electrical service;
- List the NEC minimum branch circuit requirements for each room of a dwelling unit;
- Describe the receptacle outlet requirements per the NEC for each room of a dwelling unit;
- Apply GFCI and AFCI protection requirements to each room of a dwelling unit according to the NEC;
- Explain tamper-resistant receptacle technology and identify where the NEC requires these receptacles in each room of a dwelling unit;
- Apply NEC lighting outlet and control requirements to each room of a dwelling unit;
- Understand NEC special equipment and system requirements common to dwelling units;
- Meet the minimum electrical requirements for the exterior of a dwelling unit.

### **Equipment Requirements**

You must have an active, working internet connection to access this course online, as well as a platform to access the internet, such as a computer, tablet, or phone. All popular web browsers are supported, including Google Chrome, Mozilla Firefox, Safari, and Opera. No specialized software, speaker, microphone, or web camera is required.

## **Schedule and Location**

This course is available online at any time at [www.TradesmanCE.com](http://www.TradesmanCE.com). Upon enrolling in the course, students will have access for 365 days or until the agency-issued course expiration date, whichever comes first. After the access expiration date, the course will be removed from the student's account, and any progress in the course will be lost. Before the access expiration date, the student may sign in and out of the course as many times as needed to complete the course.

## **Student Support**

Both general and technical support is available to the student before, during, and after taking the course online. Students have access to general customer support via phone, chat, and email. Students have access to the course instructor via a contact form in the course and email. All questions, concerns, and comments received will be responded to within one business day.

## **Participation/Interactivity Verification**

Inactivity Timer - Students are automatically logged out of the training after 15 minutes if the system does not sense interactivity (e.g., a mouse click or typing).

Timed Logs - Per our company's record retention policy, each student's every log-in, log-out, and lesson/assessment completion time is tracked and retained as part of the student record.

Review Questions - The student must successfully answer all review questions between sections to get credit for the course. Students cannot progress in the course until each question has been answered and each quiz has been successfully passed. More information about the quizzes/exams can be found under Assessment Details.

Global Timer - Students will not get credit until they spend a minimum of 480 active minutes total in the course.

## **Identity Verification**

Unique Username/Password - Each student that wants to complete a training course with us must create an account by registering a unique personal email address and password. The student must enter this unique identifier every time they want to access the course after logging out.

## **Assessment Details**

Quizzes - The student must complete all quizzes with a score of at least 75% in order to get credit for the course.

## Residential Wiring (2023 NEC) Timed Syllabus

Section	Title	Questions	Minutes
<b>1</b>	<b>Electrical Service</b>		<b>30</b>
	National Electrical Code (NEC) History and Development		
	Navigating the NEC		
	Introduction to a Dwelling		
	What is an Electrical Service?		
	Locating an Electrical Service for a Dwelling		
	Sizing an Electrical Service for a Dwelling		
	Components of an Electrical Service		
	Installation of Electrical Service Components		
	Installation of Service Conductors		
	Grounding and Bonding an Electrical Service		
	Quiz	<b>10</b>	<b>10</b>
<b>2</b>	<b>Garages (Attached and Detached)</b>		<b>32</b>
	Garages - History and Do They Require Power?		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION)		
	Receptacle Requirements		
	Receptacle Requirements (TAMPER-RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Equipment in Garages		
	Electric Vehicle Charging in Garages		
	Quiz	<b>8</b>	<b>8</b>
<b>3</b>	<b>Laundry Area</b>		<b>32</b>
	What is a Laundry Area?		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION)		
	Clothes Dryer Receptacle Requirements		
	Receptacle Requirements (GFCI PROTECTION)		
	Receptacle Requirements (AFCI PROTECTION)		
	Receptacle Requirements (TAMPER-RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Quiz	<b>8</b>	<b>8</b>
<b>4</b>	<b>Dining Room</b>		<b>24</b>
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION)		
	Receptacle Requirements (GFCI PROTECTION)		
	Receptacle Requirements (AFCI PROTECTION)		
	Receptacle Requirements (TAMPER-RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Quiz	<b>6</b>	<b>6</b>
<b>5</b>	<b>Kitchen</b>		<b>44</b>
	What is a Kitchen?		
	Minimum Branch Circuit(s) - 2 Small Appliance Circuits		
	Receptacle Requirements (LOCATION-WALL SPACES)		
	Receptacle Requirements (LOCATION-COUNTERTOPS)		
	Receptacle Requirements (LOCATION-ISLAND and PENINSULA)		
	Receptacle Requirements (GFCI PROTECTION)		
	Receptacle Requirements (AFCI PROTECTION)		
	Receptacle Requirements (TAMPER-RESISTANT)		
	Outlets for Ranges and Dedicated Appliances		

	Lighting Requirements (LOCATION & TYPE)		
	Additional Equipment in Kitchens		
	Quiz	11	11
<b>6</b>	<b>Great Room/ Living Room/ Den/ Bonus Room/ Library</b>		<b>32</b>
	Great, Living, Bonus Rooms/Dens/Libraries: Habitable Rooms		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION—WALL SPACES)		
	Receptacle Requirements (LOCATION—COUNTERTOPS)		
	Receptacle Requirements (GFCI PROTECTION)		
	Receptacle Requirements (AFCI PROTECTION)		
	Receptacle Requirements (TAMPER-RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Quiz	8	8
<b>7</b>	<b>Foyer</b>		<b>16</b>
	What is a Foyer - Do all Homes Have Foyers?		
	Receptacle Requirements (LOCATION—WALL SPACES)		
	Receptacle Requirements (GFCI / AFCI / TAMPER RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Quiz	4	4
<b>8</b>	<b>Hallway</b>		<b>20</b>
	What is a Hallway?		
	Receptacle Requirements (LOCATION—WALL SPACES)		
	Receptacle Requirements (GFCI / AFCI / TAMPER RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Smoke Alarms Required		
	Quiz	5	5
<b>9</b>	<b>Bedroom(s)</b>		<b>28</b>
	Identifying a Bedroom Versus Offices, Dens, Sewing Rooms, etc.		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION—WALL SPACES)		
	Receptacle Requirements (SWITCHED RECEPTACLES)		
	Receptacle Requirements (GFCI / AFCI / TAMPER RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Smoke Alarms Required		
	Quiz	7	7
<b>10</b>	<b>Bathroom(s)</b>		<b>28</b>
	What is a Bathroom?		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION—ADJACENT TO SINK and WALL SPACES)		
	Receptacle Required (GFCI PROTECTION)		
	Receptacle Requirements (AFCI / TAMPER RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Additional Equipment Requirements		
	Quiz	7	7
<b>11</b>	<b>Basements</b>		<b>24</b>
	Basements (Finished Versus Unfinished) Minimum Branch Circuit(s) Required		
	Receptacles/ Outlets for Wall Spaces/ Equipment Requirements		
	Receptacles/ Outlets (GFCI PROTECTION)		
	Receptacle Requirements (AFCI PROTECTION)		
	Receptacle Requirements (TAMPER RESISTANT)		
	Lighting Requirements (LOCATION & TYPE)		
	Quiz	6	6
<b>12</b>	<b>Crawl / Attic / Storage</b>		<b>28</b>

	What is Considered Attic/Crawl/ or Storage Space?		
	Minimum Branch Circuit(s) Required		
	Receptacle Requirements (LOCATION)		
	Receptacle Requirements (GFCI PROTECTION)		
	Receptacle Requirements (AFCI / TAMPER RESISTANT)		
	Lighting Requirements		
	Smoke Alarms Required		
	Quiz	7	7
<b>13</b>	<b>Exterior Electrical Requirements</b>		<b>28</b>
	Electrical Demands and Branch Circuits		
	Receptacle Requirements (LOCATION)		
	Receptacle Requirements (GFCI / AFCI PROTECTION)		
	Receptacle Requirements (TAMPER/WEATHER-RESISTANT, WEATHERPROOF, EXTRA DUTY)		
	Heating and Air Conditioning Equipment		
	Lighting Requirements		
	Accessory Buildings		
	Quiz	7	7
<b>14</b>	<b>Additional Installations</b>		<b>14</b>
	Additional Installations at Dwellings		
	Generators		
	Solar PV systems		
	Swimming Pools		
	Well Pumps		
	Landscape Lighting		
	Quiz	6	6
	<b>Totals:</b>	<b>100</b>	<b>480</b>
	<b>Student Minimum Time Required:</b>		<b>480</b>