

MODERN RESIDENTIAL WIRING

Modern Residential Wiring 13th Edition ©2024 (Grade 10 or above). This course provides the basic information needed for installing electrical wiring in homes or in light industrial applications. It introduces electrical energy fundamentals, circuit theory and components, electricians' tools, grounding essentials, types and components of wiring systems, device wiring, reading prints, electrical remodeling, and more. It is based on the 2023 National Electric Code, which is recommended but not required for the course. (One credit) Students may earn an additional elective credit by working with an electrician in conjunction with the course.

<p>LightUnit 1</p> <p>Electrical Careers Career Categories Applying for a Position Succeeding in the Workplace Owning a Business Training and Career Development</p> <p>Safety Workplace Injuries Working Safely Responding to an Accident Hazardous Environments</p>	<p>LightUnit 2</p> <p>Hand and Power Tools Measuring Tools Wire Tools Conduit Striking Drilling Miscellaneous Care and Repair of Tools</p> <p>Electrical Measurement and Testing Equipment Standard Testing and Measuring Equipment Specialty Testers and Meters Measuring and Testing Safe Practices</p> <p>Print Reading, Specifications, and Codes Prints Understanding Electrical Prints Specifications Electrical Codes and Safety Agencies</p>	<p>LightUnit 3</p> <p>Math Review Electrical Energy Fundamentals Electron Theory Measuring Electricity Circuits Circuit Fundamentals Electromagnetic Induction Electrical System Overview</p>	<p>LightUnit 4</p> <p>Branch-Circuit, Feeder, and Service Design Understanding Load Types Branch-Circuit Design Feeder and Service Loads Determining the Number of Branch Circuits Balancing Circuit Loads</p> <p>Conductors Wire vs. Cable Wire Materials Conductor Size Conductor Identification</p> <p>Cable Systems Flexible Metal Cable Nonmetallic Cable</p>	<p>LightUnit 5</p> <p>Raceway Systems Electrical Metallic Tubing Electrical Nonmetallic Tubing Rigid Metal Conduit Intermediate Metal Conduit Rigid PVC Conduit Flexible Metal Conduit Liquidtight Flexible Metal Conduit Surface-Mount Raceways</p> <p>Boxes, Fittings, and Covers Boxes Fittings Fill Allotment Covers</p> <p>Device Wiring Wiring Methods and Materials Preparation of Conductors Wiring Switches and Receptacles Wiring Circuits</p>
<p>LightUnit 6</p> <p>Lighting Systems Lighting Terminology Types of Lighting Types of Lighting Fixtures Types of Lamps Controlling Fixtures Installing Fixtures Wiring Lighting Circuits</p> <p>Appliance Wiring and Special Outlets Appliance Wiring Kitchen Appliances Room Air Conditioner Units Miscellaneous Appliance Circuits Water Heaters Heaters</p>	<p>LightUnit 7</p> <p>Overcurrent Protection Causes of Overcurrent Protective Devices GFCI and AFCI Protection</p> <p>Grounding Grounding Basics How the System Ground Works Equipment Grounding</p> <p>Service Equipment Service Components Service Disconnects Service Grounding Service Clearances Service Completion Transformers Phases</p>	<p>LightUnit 8</p> <p>Farm Wiring Power Distribution Cable or Conduit Locating Lights Computing Farm Power Requirements</p> <p>Mobile Home Wiring Distribution Panelboard Feeder Assembly Mobile Home Service Equipment Calculating Panelboard Load Mobile Home Parks</p> <p>Swimming Pool Wiring Bonding Grounding Receptacles Switches Lighting Miscellaneous Equipment Overhead Conductor Clearance</p>	<p>LightUnit 9</p> <p>Telephone and Computer Network Wiring Systems Overview Installation Other Systems</p> <p>Motors Types of Motors Motor Nameplate Proper Size of Motor Feeder Conductors Protection of Motor Feeder Conductors General Layout Controller Requirements Hermetic Motors Causes of Motor Failure Mounting Service and Repair of Motors</p>	<p>LightUnit 10</p> <p>Emergency and Standby Systems Safety Emergency and Standby Systems Generator Size Portable Generators Permanent Generators Uninterruptible Power Supplies</p> <p>Electrical Remodeling Basic Considerations Safety Special Tools Building Construction Installing Cable Box Installation Modernizing a Building's Service Surface Raceways and Multioutlet Assemblies</p> <p>Maintenance and Troubleshooting Safety Considerations Troubleshooting Tools Diagnosing Problems</p>