

# NEC 2017 Analysis of Changes



## Course Description

This extensive course is taught by our SMEs (Subject Matter Experts) on the New NEC codes, this comprehensive course is a must-take course. The 2017 National Electrical Code is being adopted by many states for industry-wide electrical standards.

The electric code regularly changes, so both experienced electricians as well as people new to the NEC will benefit from BTS Trainings practical and in-depth 2017 National Electrical Code Analysis of Changes course.

Whether running power to a new piece of electrical equipment, setting the overloads on a motor starter, installing a security camera, or replacing fluorescent ballast compliance with the NEC is mandatory. The code has been adopted as law in all states. We cover all 2017 NEC major changes that are highlighted throughout this course.

This course covers

- 255 Reported Changes
- Five New Articles
- Five Improvements to the NEC
- And More...

## Students Will Learn

- **How the NEC Safeguards People and Property.**
- **How to Make Your Facility and Operations NEC Compliant.**
- **How to Become Current with the Most Recent NEC Updates**
- **Five New Articles Includes 1. Energy Storage Systems, Article 706, 2. Large-Scale PV Electric Power Production, Article 691, 3. Stand-Alone Systems, Article 710, 4. Direct-Current Microgrids, Article 712, 5. Fixed Industrial Process Heating, Article 425**
- **Five Improvements to the NEC Includes 1. Single-Phase Dwelling Services & Feeders, 310.15(B)(7), 2. GFCI Protection for Non-Dwelling Units, 210.8(B), 3. Reconditioned Equipment, ID & Traceability, 110.21(A)(2), 4. Short-Circuit Current Documentation, 5. Limited Access Working Space Requirement, 110.26(A)(4)**
- **-And more...**

## Target Audience

Electrical contractors, Electricians, Maintenance electricians, HVAC maintenance and Repair Technicians, Plant & facility maintenance technicians, Building engineers, Building managers & superintendents, Plant & facility managers, Stationary

engineers, Energy management personnel, Safety directors

## Prerequisites

A basic understanding of the NEC Codes and Standards, and the need to be updated on the New Articles and Standard changes and updates.

## Course Outline

### Introduction

- Code-Wide Changes
- New Articles for the 2017 NEC
- Introduction

### Chapter 1: General, Articles 100 110

- Definitions
- Requirements for Electrical Installations

### Chapter 2: Wiring and Protection, Articles 210 250

- Branch Circuits
- Feeders
- Branch-Circuit, Feeder, and Service Calculations
- Outside Branch Feeders and Circuits
- Services
- Overcurrent Protection
- Grounding and Bonding

### Chapter 3: Wiring Methods, Articles 300 370

- Wiring Methods and Materials
- Conductors for General Wiring
- Cabinets, Cutout Boxes, and Meter Socket Enclosures
- Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures
- Armored Cable: Type AC
- Flat Conductor Cable: Type FCC
- Power and Control Tray Cable: Type TC
- Rigid Metal Conduit: Type RMC
- Liquidtight Flexible Metal Conduit: Type LFMC
- Electrical Metallic Cable: Type EMT
- Auxiliary Gutters
- Cablebus

Chapter 4: Equipment for General Use, Articles 404-480

- Switches
- Receptacles, Cord Connectors, and Attachment Plugs (Caps)
- Switchboards, Switchgear, and Panelboards
- Industrial Control Panels
- Luminaires, Lampholders, and Lamps
- Lighting Systems Operating at 30 Volts or Less and Lighting Equipment Connected to Class-2 Power Sources
- Appliances
- Fixed Electric Space-Heating Equipment
- Fixed Resistance and Electrode Industrial Process Heating Equipment
- Fixed Outdoor Electric Deicing and Snow-Melting Equipment
- Motors, Motor Circuits, and Controllers
- Air-Conditioning and Refrigerating Equipment
- Generators
- Storage Batteries

Chapter 5: Special Occupancies, Articles 500-590

- Hazardous (Classified) Locations, Classes I, II, and III, Divisions 1 and 2
- Class I Locations
- Commercial Garages, Repair and Storage
- Motor Fuel Dispensing Facilities
- Spray Application, Dipping, and Coating Process
- Health Care Facilities
- Theaters, Audience Areas of Motion Picture and Television Studios, Performance Areas, and Similar Locations
- Carnivals, Circuses, Fairs, and Similar Events
- Agricultural Buildings
- Mobile Homes, Manufactured Homes, and Mobile Home Parks
- Recreational Vehicles and Recreational Vehicle Parks
- Marinas and Boatyards
- Temporary Installations

Chapter 6: Special Equipment, Articles 600-695

- Electric Signs and Outline Lighting
- Office Furnishings
- Cranes and Hoists
- Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts
- Electric vehicle Charging System
- Information Technology Equipment
- Pipe Organs
- X-Ray Equipment
- Industrial Machinery
- Swimming Pools, Fountains, and Similar Installations
- Natural and Artificially Made Bodies of Water
- Solar Photovoltaic (PV) Systems
- 1 Large-Scale Photovoltaic (PV) Electric Supply Stations
- Fire Pumps

#### Chapter 7: Special Conditions, Articles 700-770

- Emergency Systems
- Legally Required Standby Systems
- Optional Standby Systems
- Interconnected Electric Power Production Sources
- Energy Storage Systems
- Critical Operations Power Systems (COPS)
- Stand-Alone Systems
- Direct Current Microgrids
- Class 1, Class 2, and Class 3 Remote-Control, Signaling, and Power-Limited Circuits
- Instrumentation Type Cable: Type ITC
- Fire Alarm Systems
- Optical Fiber Cables and Raceways

#### Chapter 8: Communications Systems, Articles 810-840

- Radio and Television Equipment
- Premises-Powered Broadband Communications Systems

#### Chapter 9: Tables and Annex D

- Notes to Tables
- Informative Annex D

### **Delivery Method**

Instructor-Led

### **Equipment Requirements**

**(This applies to our hands-on courses only)**

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

### **Course Length**

2 Days