2020 MODEL CODE CHANGES: NEC ARTICLES 400-410 EQUIPMENT FOR GENERAL USE

This class incorporates the requirements of the previous three chapters into practical applications using devices from hand-held electrical tools to motors. Using the 2020 NEC, the class will review the identifying letters used to label portable cord and cable and the environments in which those cords and cable are to be used. The class will cover switches (both mechanical and electronic), receptacles and various connectors and what the different “grades” mean from residential to Federal Specifications (true “Spec” grade”). The class will review code changes and revisions for switchboards and panelboards with special consideration for available fault current. The class will review luminaire requirements and the many changes brought about by new lighting sources and horticultural applications.

This course is a Power Point presentation of the model code to meet part of the minimum requirements for individuals who hold a State of Utah Electrical License

CLASS OUTLINE

ARTICLE 400: Flexible Cords and Cables

PART I, II & III: General (400.1-36)

1. 400.4 Types: Letter Identification: S, SO, W, etc.
2. 400.5 Revision: Ampacity Tables, adjustments for more than 3 conductors in table 400.5 (A)(3)
3. 400.12 Revision: note to UL 817 and 62
4. 400.17 Revision: Adjusting ampacities for portable cord installed in raceways for physical protection

ARTICLE 402.1-9: Fixture Wire

1. 402.3 Revision: Ampacity table
2. 402.9 Revision: Marking requirements

ARTICLE 404.1-28: Switches

1. 404.2 (C) Revision: Grounded Conductor in Lighting Circuits expanded.
2. 404.9 (A)(B) Revision: Impact of electronic devices
3. 404.14 Revision: (C, D, E, F) Match switch rating to load
4. 404.22 Revision: Electronic loads not to introduce objectional current on the EGC.

ARTICLE 406:1-13 Receptacles

1. 406.3 (A & D) Not reconditioned and comments on isolated ground
2. 406.4 (D) (1-7) Replacements, non-grounding, GFCI, AFCI and tamper resistant must be installed where required. New: (7) Controlled receptacles
3. 406.5 (G) New Receptacle orientation
4. 406.9 (B&C) Revision: Receptacles in wet or bathtub, shower locations
5. 406.12 Revision: Tamper resistant receptacle expansion
6. 406.13 (A-D) New: Requirements on single-pole separable connectors

ARTICLE 408: Switchboards, Switchgear and Panelboards

Part I: General 408.1-6

1. 408.6 New: Short circuit current rating not less than available fault current
2. 408.8 (A&B) New: Reconditioned equipment

Part II Switchboards and Switchgear 408.16-23

1. 408.18 (C) New: Connection requirements
2. 408.23 (C) New: Power monitoring equipment must follow 312.8 (B)

PART III: Panelboards 408.30-43

1. 408.55 & 56 Revision: Wire-bending space and minimum space between bare metal parts

ARTICLE 410: Luminaires

Part I: General

1. 410.7 New: Reconditioned equipment & retrofit kits

Part II: Locations

1. 410.10 (D) (1&2) New: Bathtub and Shower Areas 3’ horizontal and 8’ vertical and suitable for wet locations

Part IV: Luminaire Support

1. 410.36 (A) Revision: Outlet boxes supporting luminaires shall comply with 314.23 & 27 and 210.70

Part V: Grounding

1. 410.42 & 44 Revision: Luminaire shall be connected to an EGC or GFCI,
2. 410.46 New: Luminaires with exposed metal parts shall be provided with a means of connecting to an EGC

Part VI: Wiring 410-48-70

1. 410.52 New: Conductor insulation suitable for environment
2. 410.54 (A, B & C) New: Pendant Requirements
3. 410.69 New: Control Conductor Insulation
4. 410.70 New: Air space for combustible shades

Part VII: Construction of Luminaires

1. 410.82 New Portable luminaires wired with recognized flexible cord complying with 400.4

Part XVI: Horticultural Lighting

1. 410.170-188 New: Requirements for horticultural lighting

COURSE DOCUMENTATION

Attendees of the 4-hour class will have continuing educations credits (CC 2020 Model Code) submitted to the Department of Professional Licensing within 7 working days.

Attendees will also receive a Certificate of Completion by email within the same 7-day period.

A roster of attendees will be kept for at least 3 years after the class.