National Electrical Code®– 2020

4 Days, 2.8 CEUs

This course is developed to provide a comprehensive study of Chapters 1 through 4, including a brief overview of Chapter 5, of the 2020 National Electrical Code® (NEC). Major updates and revisions from previous editions are addressed throughout this course. The class participant learns how to apply the Code to properly install electrical circuits and equipment. This course provides a study of the definitions of electrical terms; requirements for electrical installations, such as branch circuits and grounding systems; wiring methods and materials; overcurrent protection, voltage drop, neutral load and other calculations; the method for determining conductor ampacity; sizing circuits and devices for motors and motor circuits through practical exercises; and more. The content of the NEC®–2020 course also addresses the OSHA 29 CFR 1910.302-.308 mandated requirements for electrical installations. This course is intended for electricians, electrical inspectors and electrical contractors who have a need to meet federal, state and local requirements for performing electrical work.

Lab and Classroom Attire

AVO is committed to the personal safety of each participant and requires long pants and ANSI rated "safety toe" work shoes for class and lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open toe shoes and shorts are not considered appropriate attire for the classroom.

Learning Objectives

To receive 2.8 CEUs, participants must attend 4 days of class (28 contact hours) and attain a minimum grade of 80% on the final exam. Upon completion of this course, the participant will demonstrate that they are able to:

- Describe the organization of the 2020 National Electrical Code® and its general requirements.
- Identify and use the various tables.
- Explain grounding and bonding requirements.
- Outline the method for determining conductor ampacity.
- Calculate neutral, branch circuit, and feeder loads.
- Summarize how to calculate electrical enclosure and conduit conductor fill.
- Determine acceptable wiring methods.
- Relate the process of sizing motor circuits and required components.
- List the requirements for GFCI use with temporary wiring.

SCOPE

Day 1* (7 contact hours)

I. Introduction (1.5 hour)
- A. Schedule
- B. Course Outline
- C. Preface
- D. History & Development
- E. Enforcement

AM Break

II. Code Introduction and General Requirements (6 hrs)
- A. Purpose & Scope
- B. Definitions

Lunch
- C. Installation Requirements

PM Break
- C. Installation Requirements (cont'd)

Day 2 (7 contact hours)

III. Wiring and Protection (7.0 hours)
- A. Grounded Conductor Requirements

AM Break
- B. Branch Circuit Requirements

Lunch
- C. Services

PM Break
- D. Overcurrent Protection
- E. Grounding & Bonding

Day 3 (7 contact hours)

IV. Wiring Methods and Materials (7 hours)
- A. Protection Against Physical Damage

AM Break
- B. Conductors for General Wiring

Lunch
- C. Wire Bending Space Requirements

PM Break
- D. Box Sizing
- E. Cables & Raceways

Day 4 (7 contact hours)

V. Equipment for General Use (5 hours)
- A. Cords, Cables, and Fixture Wires

AM Break
- B. Switches and Receptacles
- C. Panelboards and Luminaires

Lunch
- D. Designing Motor Circuits
- E. Transformers & Capacitors

PM Break

VI. Special Applications (1 hour)
- A. Special Occupancies
- B. Special Equipment
- C. Special Conditions
- D. Communications Systems
- E. Tables
- F. Informative Annexes/Index

VII. Conclusion (1 hour)
- A. Review
- B. Final Exam

*Class scheduling times may vary based on discussions and size of class

AVO Training Institute is accredited by the International Association for Continuing Education and Training (IACET) and is accredited to issue the IACET CEU

STANDARD EQUIPMENT LIST
NATIONAL ELECTRICAL CODE® – 2020

REVISED FEBRUARY 2022 - IBH
COURSE NUMBER 227, REV 2 – 2020
4 DAYS

TEXT

1 / STUDENT	*NATIONAL ELECTRICAL CODE® – 2020* COURSE #227, Rev 2 September 2020
1 / STUDENT	NEC® Code book 2020 Edition (NFPA 70)

EQUIPMENT

1 / STUDENT	CALCULATOR

FOR VIRTUAL CLASSES:
CONTENT MATERIAL WILL BE PROVIDED IN DIGITAL FORMAT