
Article 120 – Load Calculations – 2026 NEC
Course Syllabus & Outline

Course Details:

CEU Credits: 4

Contact Hours: 4

Course Type: Code Related

Required Textbook: 2026 NEC Code Book Recommended

Class Format/Location: Web-based course delivered online @ bluevoltceu.com

Prerequisite: Current or reciprocal state electrical license

Instructor: Rich Van Wert

Course Description:

Article 120 is the ‘go-to’ article for calculation of branch circuit, feeders and service loads. One must understand 120 in order to fully comply with other provisions of the code. This course teaches load calculations for single-family and two-family dwelling units, explains demand factors and neutral load, and explains new additions to the article in the 2026 NEC.

Course Learning Objectives:

- Perform load calculations for single-family and two-family dwellings.
- Apply Ohm’s Law and related concepts.
- Implement the 5-Part method of load calculation.
- Calculate neutral load.
- Understand updates to Article 120 in the 2026 NEC.

Evaluation/Grading: Three progress quizzes during the course require 75% to pass.

Control Time & Security: BlueVolt times each student's active participation in a course and enforces the module seat times (shown on the syllabus) via a timer. After 10 minutes of inactivity, the seat time clock stops and the learner is logged out. Audio plus quizzes will meet the seat time requirement. For security, learner accounts are password protected. Learners must confirm their identity each time they log into the course.

Course Outline:

Course Orientation – 8 minutes

Module 1 – 11 minutes

120.1 Scope includes calculation of branch-circuit, feeder, and service loads.
120.3 References for specific-purpose calculation requirements.
120.5 Calculations

Module 2 – 12 minutes

Calculating Lighting Load
120.10 General
120.41 Dwelling Units, Minimum Unit Load
Table T120.42(A) General Lighting Loads by Occupancy

Module 3 – 8 minutes

Calculating Small Appliance Load
120.52(A) Small-appliance Circuit Load
120.52(B) Laundry Circuit Load

Module 4 – 3 minutes

Calculate Demand Factors
120.45 Lighting Load Demand Factors

Module 5 – 11 minutes

120.42(B) Energy Code
120.14 Specific Appliances or Loads

Quiz 1 – 20 minutes

Module 6 – 12 minutes

Calculate Appliances Fixed-In-Place Load
120.41 Dwelling Occupancies
120.53 Appliance Load – Dwelling Unit(s)
Table 430.248 Full-load Currents in Amperes, Single Phase AC Motors

Module 7 – 5 minutes

Calculate Dryer Load
120.54 Electric Clothes Dryers – Dwelling Unit(s)

Table 120.54 Demand Factors for Household Electric Clothes Dryers

Module 8 – 21 minutes

Calculate Cooking Equipment Load
120.55 Electric Cooking Appliances in Dwelling Units and Household Cooking Appliances Used in Instructional Programs
Table 120.55 Electrical Cooking Appliances in Dwelling Units
Notes for Table 120.55

Module 9 – 12 minutes

Calculate Heat and Air Conditioning Load
Calculate Largest Motor Load
Section 120.57 Electric Vehicle Supply Equipment (EVSE) Load.
Section 120.60 Noncoincident Loads

Quiz 2 20 minutes

Module 10 – 12 minutes

Optional Calculation
Section 120.82(A) Feeder and Service Load
Section 120.82(B) General Loads
Section 120.82(C) Heating and Air-Conditioning Load

Module 11 – 15 minutes

Calculate Neutral Load
Section 120.61(A) Basic Calculation
Section 120.61(B) Permitted Reductions

Module 12 – 9 minutes

Part VIII Recreational Vehicle Parks
Part IX Mobile and Manufactured Homes

Quiz 3 – 20 minutes