

Expect Excellence Apprenticeship Program

Level 3 – Semester 1 (Course 3A)

This semester advances apprentices through NEC-based electrical math and an in-depth study of bonding and grounding. Learners apply Code rules to branch circuits, feeders, services, overcurrent protection, wiring methods, and equipment. The curriculum blends calculation practice with code interpretation to prepare apprentices for higher-level applications.

Course Objectives

- Apply NEC calculation methods to branch circuits, feeders, services, and overcurrent protection.
- Interpret and use key NEC tables and rules for wiring methods and equipment applications.
- Demonstrate understanding of bonding and grounding theory and NEC requirements across occupancies and systems.
- Solve calculation problems and demonstrate readiness through exams and review.

Course Topics and Hours

Topic	Hours	Description
Orientation & Syllabus Overview	2	Program expectations and course roadmap.
NEC Calculations I	8	General rules; branch circuits & feeders; service loads & services; overcurrent protection (Arts. 100, 110, 210, 215, 220, 230, 240).
NEC Calculations II	6	Wiring methods & materials; equipment for general use; special equipment (Arts. 310, 334, 376, 422, 424, 430, 440, 445, 450, 625).
NEC Calculations – Exam Practice & Final	4	Random-order comprehensive exams (pages 163–172).
Bonding & Grounding – Fundamentals	4	Electrical theory and NEC rules for bonding & grounding (Sections I–II; Chapter 1).
Bonding & Grounding – Wiring & Protection	4	Chapter 2 (parts 1 & 2) mixed questions.
Bonding & Grounding – Wiring Methods & Materials	4	Chapter 3 (parts 1 & 2) all questions.

Bonding & Grounding – Applications	8	Chapters 4–6 & 8: equipment for general use, special occupancies/equipment, communications systems.
Bonding & Grounding – Exams & Review	8	Final Exam B (Q1–50 & Q51–100) and comprehensive review.

Total Contact Hours: 48

Instructional Method

The Expect Excellence Apprenticeship Program follows the Mike Holt curriculum, utilizing his textbooks and supporting materials. Classes are delivered virtually via Zoom. Students are required to keep their cameras on and remain visible. Instructors take roll at the beginning, middle, and end of each session, and student participation is required to ensure accountability. Assignments are given each class session and are graded and recorded through the program's Learning Management System (LMS), D2L.