

Expect Excellence Apprenticeship Program

Level 4 – Semester 1 (Course 4A)

This semester prepares apprentices for the electrical licensing exam through intensive review of electrical theory, applied calculations, motors, transformers, overcurrent protection, grounding and bonding, and selected NEC Articles. The semester is structured around exam preparation modules and reinforces mastery of critical concepts necessary for successful licensure.

Course Objectives

- Strengthen understanding of electrical theory, formulas, and circuit fundamentals for exam readiness.
- Apply NEC requirements to branch circuits, feeders, services, overcurrent protection, grounding, and bonding.
- Interpret and analyze motor, generator, transformer, and relay applications.
- Demonstrate problem-solving skills with calculations and code application in preparation for the journeyman exam.

Course Topics and Hours

Topic	Hours	Description
Orientation & Curriculum Review	2	Review of course structure, expectations, assignments, and exam preparation plan.
Electrical Fundamentals	14	Math, Ohm's Law, Watt's Law, Series/Parallel Circuits, AC fundamentals, power factor, and formula wheel review.
Motors & Generators	8	Theory and NEC coverage of motors and generators, including unit operations and applications.
Relays & Transformers	4	Control relays, transformer theory, and NEC requirements.
Overcurrent Protection	2	NEC coverage of OCPD selection and coordination, conductor protection.
Exam – Fundamentals	2	Comprehensive exam on electrical fundamentals (Module 1).
NEC Articles 110–250	14	Review and application of Articles 110 (General), 210 (Branch Circuits), 215 (Feeders), 230 (Services), 240 (OCP), and 250 (Grounding/Bonding).
Review	2	Open review, additional practice, or instructor-selected focus topics.

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.