

# ELECTRICIAN/2: WIRING AND CODES (120 Hours)

Course No.: 72-75-55

## COMPETENCY CHECKLIST

Student Name \_\_\_\_\_

Teacher Name \_\_\_\_\_ School Site \_\_\_\_\_

Start Date \_\_\_\_\_ Completion Date \_\_\_\_\_ Certificate Date \_\_\_\_\_

Teacher Signature \_\_\_\_\_ Student Signature \_\_\_\_\_

(Signatures verify completion of course competencies)

### A. **WORKPLACE SAFETY** (3 hrs)

- \_\_\_\_\_ 1. Class expectations
- \_\_\_\_\_ 2. Class rules
- \_\_\_\_\_ 3. Demo ability to read and follow instructions
- \_\_\_\_\_ 4. Identify standard shop procedures
- \_\_\_\_\_ 5. Shop safety rules and regulations
- \_\_\_\_\_ 6. First aid practices for electricians/technicians
- \_\_\_\_\_ 7. Describe/demo CPR
- \_\_\_\_\_ 8. Cal/OSHA regulations for electrical industry
- \_\_\_\_\_ 9. EPA regulations that apply to electricians
- \_\_\_\_\_ 10. NEC roles in safeguarding working conditions
- \_\_\_\_\_ 11. Safety test

### B. **ELECTRICAL WIRING CODES AND PERMITS** (2 hrs)

- \_\_\_\_\_ 1. Importance of local/state/NEC requirements
- \_\_\_\_\_ 2. 3-5 requirements for each type of permit
- \_\_\_\_\_ 3. Identify plans used for electrical wiring
- \_\_\_\_\_ 4. Name items that are inspected

### C. **WIRING DESIGN AND PROTECTION** (9 hrs)

- \_\_\_\_\_ 1. Discuss wiring design considerations
- \_\_\_\_\_ 2. Define over-current protection
- \_\_\_\_\_ 3. Discuss grounding considerations
- \_\_\_\_\_ 4. Metering equipment options & requirements

### D. **WIRING MATERIALS AND METHODS** (50 hrs)

- \_\_\_\_\_ 1. Discuss requirements for conductors
- \_\_\_\_\_ 2. Discuss impact of the wiring enclosures
- \_\_\_\_\_ 3. Conduits and their installation methods
- \_\_\_\_\_ 4. Wiring considerations for conductor enclosures
- \_\_\_\_\_ 5. Miscellaneous wiring enclosures
- \_\_\_\_\_ 6. Areas where open wiring is used
- \_\_\_\_\_ 7. Features/functions of various branch circuits
- \_\_\_\_\_ 8. Features/functions of boxes and cabinets
- \_\_\_\_\_ 9. Explain the mounting procedure
- \_\_\_\_\_ 10. Discuss features/functions of lighting fixtures

### E. **GENERAL-USE EQUIPMENT** (20 hrs)

- \_\_\_\_\_ 1. Different equipment meant for general use
- \_\_\_\_\_ 2. Considerations in rotating equipment
- \_\_\_\_\_ 3. Considerations when using transformers
- \_\_\_\_\_ 4. Considerations when using switches
- \_\_\_\_\_ 5. Different types of switchboards/panel-boards
- \_\_\_\_\_ 6. Proper locations of switchboards/panel-boards
- \_\_\_\_\_ 7. Equipment for switchboards/panel-boards
- \_\_\_\_\_ 8. Working space requirements to consider

### F. **SPECIAL OCCUPANCIES** (15 hrs)

- \_\_\_\_\_ 1. Define special occupancies
- \_\_\_\_\_ 2. Features/functions of special occupancies
- \_\_\_\_\_ 3. Special vs. residential occupancies
- \_\_\_\_\_ 4. Precautions working w/special occupancies
- \_\_\_\_\_ 5. Chemical classifications w/special occupancies

### G. **SPECIAL EQUIPMENT** (3 hrs)

- \_\_\_\_\_ 1. Define special equipment
- \_\_\_\_\_ 2. Electrical signs and outside lighting
- \_\_\_\_\_ 3. Elevator/dumbwaiter/escalator/moving walk
- \_\_\_\_\_ 4. Features/functions of electric welders
- \_\_\_\_\_ 5. Appropriate locations for specialty equipment

### H. **SPECIAL CONDITIONS** (3 hrs)

- \_\_\_\_\_ 1. Define special conditions
- \_\_\_\_\_ 2. Identify/explain use of listed systems
- \_\_\_\_\_ 3. NEC provisions that cover special conditions

### I. **COMMUNICATIONS SYSTEMS** (3 hrs)

- \_\_\_\_\_ 1. Identify/describe NEC communication systems

### J. **TABLES AND EXAMPLES** (6 hrs)

- \_\_\_\_\_ 1. Types of info available in NEC tables
- \_\_\_\_\_ 2. Interpret the data
- \_\_\_\_\_ 3. Three examples of typical electrical problems
- \_\_\_\_\_ 4. Application of data on problems chosen

**K. RESOURCE MANAGEMENT REVIEW (1 hr)**

- \_\_\_\_\_ 1. Define resources/management/sustainability
- \_\_\_\_\_ 2. Importance of managing resources
- \_\_\_\_\_ 3. Specific examples of effective management
- \_\_\_\_\_ 4. Benefits of effective resource management

**L. REVIEW AND EVALUATION (5 hrs)**

- \_\_\_\_\_ 1. Written test following each course section
- \_\_\_\_\_ 2. Oral test following each course section
- \_\_\_\_\_ 3. Pass the final examination