Wire Commercial Units

Program: Electrician Technician

Course: EL150 Commercial Applications

Objective: Under the supervision of your instructor, students should be able to do the following:

- Completely wire 4 – 6 commercial units
- Install appropriate devices
- Test and troubleshoot.

Lab Equipment:

- Lab Bays

Required Tools:

- 1 – MC cutter
- 1 – ½" Pipe bender

Materials: *(Based of groups of 4-6 students)*

- 50' – ½" EMT conduit
- 25 – ½" EMT set screw connectors
- 25 – ½" one-hole straps
- 30' – 14/2 MC cable
- 12 – 3/8" one-hole straps
- 75' - #14 THHN Green
- 75' - #14 THHN Black
- 75' - #14 THHN White
- 50' - #14 THHN Blue
- 50' - #14 THHN Red
- 36 - Red wire connectors
- 6 – 15-amp breakers
- 12 – red anti shorts
- 6 – keyless fixtures
- 6 – lamps
- 6 – switches
- 6 – GFCI receptacles

Safety:

- Safety glasses
- Hard hats

Resources: N/A

Time Required: One Day

Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are the student's responsibility

Procedure:

- Using 4-6 bays in the lab (depending on size of the group), Students will do the following:
- In each bay layout:
    - 1 – Switch near the opening at 45" to the top of the box.
    - 1 – GFCI receptacle in the bay next to the switch, 45" to the top of the box.
    - 1 – Light center in the ceiling of the bay
- Install ½" EMT conduit from the sub panel in the first bay to the light fixture 4S box.
- Install ½" EMT conduit from the first light box to the second light box until all have light boxes are connected.
- Install ½" EMT from each light box to the switch in that bay
- Install MC conduit from the switch to the GFCI in each bay.
- Run the appropriate wire through the conduit, each bay having a separate circuit
- Make up all the boxes.
- Install the appropriate devices
- Inspect with your instructor and then test.
- Troubleshoot any problems
- If time allows
    - Have students create some troubleshooting issues
    - Have the students swap units and trouble shoot the issues installed.