

Name \_\_\_\_\_

### Lab # 6 -- Electrical

Description: Installation and wiring using common industrial devices.

**Materials:**

4 - 4" Sq boxes\*\*  
5 - 1/2" EMT Box connectors\*\*  
2 - PVC Box Connectors\*\*  
2' 1/2" EMT\*\*  
1' 1/2" PVC Conduit\*\*

1 - Blank Cover  
2 - single gang plaster rings  
1 - round plaster ring.  
1 - Duplex Receptacle  
1 - Lamp Holder  
1 - Switch

Wire of various colors

Wire nuts

\*\* Provided pre-mounted on a 1/2"  
plywood lab board.

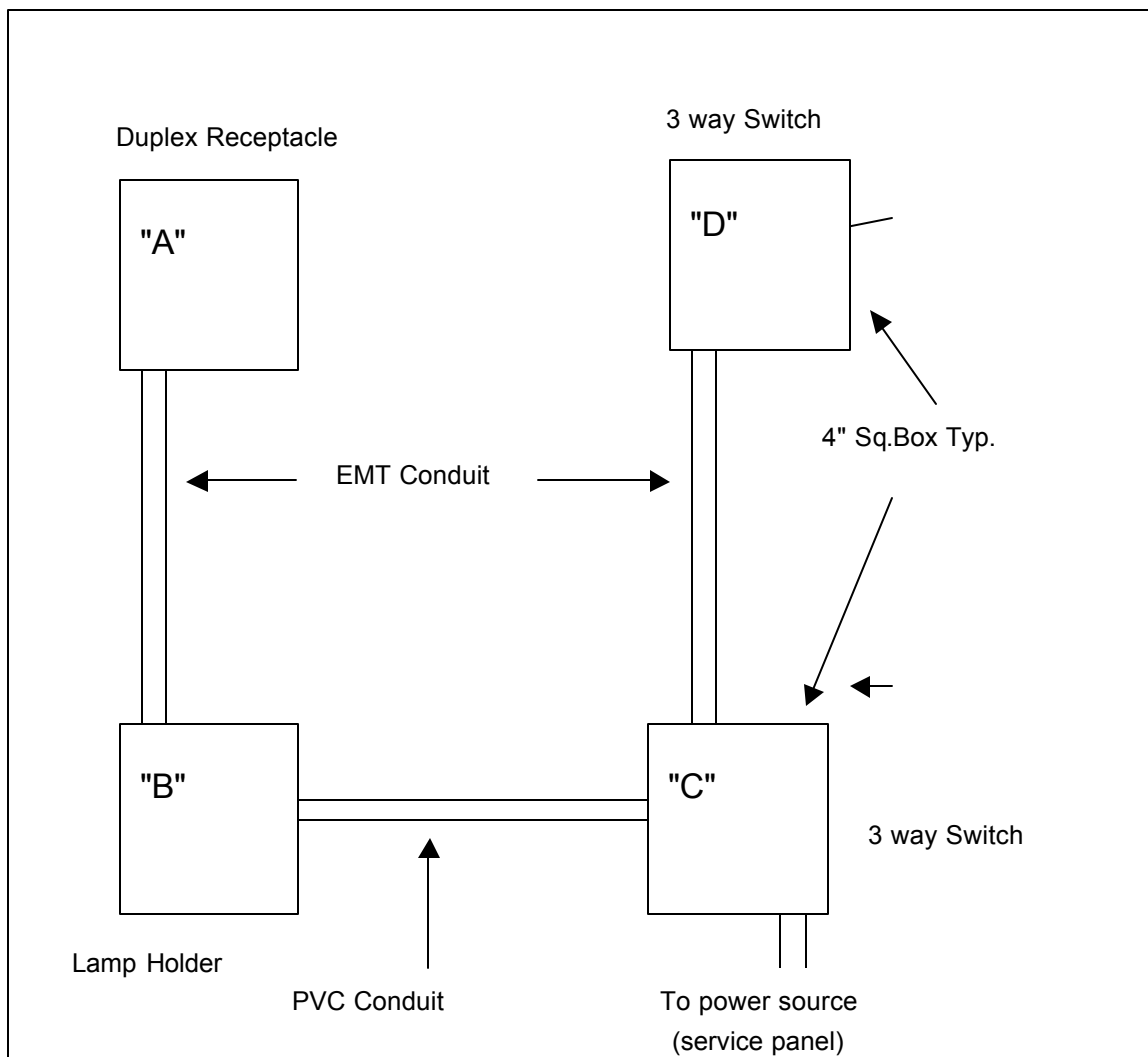
**Tools:**

Screwdriver  
Needle Nose Pliers  
Wire cutter/stripper  
EMT Bender

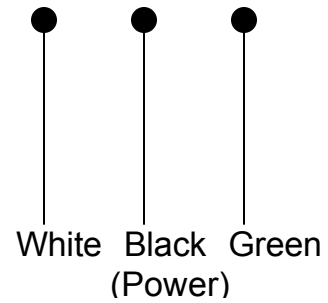
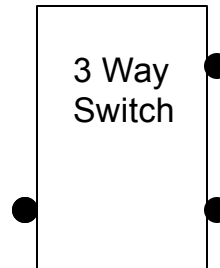
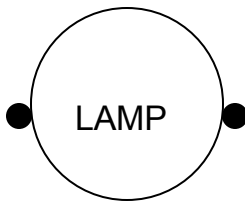
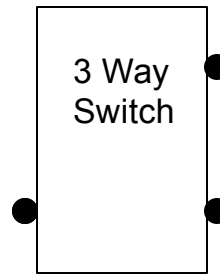
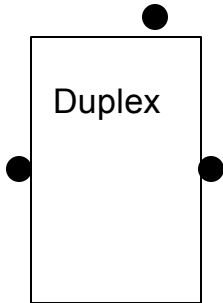
**Directions:**

1. Neatly diagram your circuit on the provided worksheet. Show wire connections with a dot and label with wire color.
2. Install appropriate plaster rings on the 4" square boxes.
3. Wire a duplex receptacle in Box A. A 3 way switch in boxes C & D that control a lamp in box B.
4. Power source is supplied as indicated. [Use short black, white, and green wire to demonstrate incoming power. Wires are spliced in Box C. Wires will be connected to an actual power source.]
5. Observe color-coding, grounding, and all other NEC rules.
6. Secure the devices to the boxes with screws for testing.

7. Attach a temporary power cord to your source wires with wire nuts. OVBSEVE color-coding.
8. Using the Testing Circuit Breaker box, plug in your board and test the circuit using a lamp and duplex receptacle tester. Have this portion graded.
9. Disconnect your board. Use a piece of tape to label the board with your name. Remove the screws from the devices and turn in the board for grading.
10. Bend a 90° bend in the end of a piece of EMT conduit. Cut off the bend 8" from the outside of the bend. **Label with tape on the 8" leg** and turn in.



### Wiring Worksheet



### Electrical Lab

**Grading:**

**Name:**

<b>Criteria</b>	<b>Possible</b>	<b>Score</b>
Correct circuit (live test)	4	
Correct Grounding	4	
Correct usage of wire colors and terminal color coding	4	
6" of free conductor.	4	
Screw terminals neat and correct.	4	
Correct use of plaster rings	2	
Correct use of wire nuts.	4	
90 degree bend	2	
Length of bend 8"	2	
<b>TOTAL</b>	30	