Title: **Switched and Duplex Circuit, Switch HR** Hands On: 3

Course: Electrical Applications Unit: Electrical Shop CLO: 1, 5, 7

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall create an electrical circuit design consisting of one switch, a luminaire and a duplex.
2. Student shall apply the National Electrical Code articles during construction.
3. Student shall relate all Lock-Out and Tag-Out requirements to safety standards.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Hands On. Grading shall be based on the Electrical Applications Shop Job Rubric.

**Materials**

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| --- | --- |
| Student Provided Materials | **Department Provided** |
| NM-B 14/2 with ground cable | 4”x4”x1½” Metal Electrical Boxes |
| One single pole single throw switch | NM Sheathed Cable Clamps |
| One luminaire |  |
| One 120V/15A duplex receptacle |  |
| Wire Nuts |  |
| Grounding Straps |  |
| Grounding Wire-nuts (Greenie) |  |
| Electrical Tape |  |

**Instructions**

Design a circuit that shall switch a luminaire and energize a duplex receptacle. The receptacle is to be energized at all times. Power for the circuit shall enter at the switch box. Use the space on the opposite side of this page to draw the design. Have the instructor review the design before wiring. Below is an example of a blueprint electrical schematic of the circuit.



|  |  |
| --- | --- |
| Instructor reviews wiring diagram. After approval, lock-out the station and begin wiring. | Initials \_\_\_\_\_\_\_\_ |
| After completing the wiring but **before** energizing the circuit, have the instructor check all wiring. | Initials \_\_\_\_\_\_\_\_ |
| After wiring check is complete and approved by the instructor, remove lock and test circuit **with** the instructor. | Initials \_\_\_\_\_\_\_\_ |
| Render your wiring diagram in a CAD based computer program. |  |

